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Welcome

Hello and welcome to the April issue of *Airliner World*, incorporating *Airports of the World*. This month, we're taking you behind the scenes of the aviation industry with a special issue focusing on the people, processes and innovations that keep the world of air travel moving. Aviation is an industry of constant evolution, and this month's stories highlight the resilience, ingenuity, and dynamism of airlines and airports around the world.

First, Martyn Cartledge heads to Manchester Airport to spend the day with its airfield operations team. Managing one of the UK's busiest airports is no small task, and Martyn sheds light on the incredible effort that goes into keeping flights running smoothly every day.

Further afield, our own Robert Veitch takes us behind the scenes at Turkish Airlines' world-class facilities in Istanbul. The airline flies to more countries in the world than any other, and his report provides a fascinating glimpse into the infrastructure supporting this huge operation.

Our 'How it Works' series returns for its second instalment, this time with Jonathan Hinkles breaking down the art of route network planning and development. From economic viability to operational logistics, this feature explores the complexities that determine where airlines choose to fly next.

For those interested in smaller-scale operations, Andreas Rohde takes us aboard Baltrum Flug, Germany's tiniest airline, which operates with just a single Cessna 172. Proving that size isn't everything, this carrier plays a vital role in island transport.

In the realm of cutting-edge aviation technology, Edward Paine delves into Embraer's latest innovations, particularly its efforts to introduce the autopilot into the take-off process; a development that could reshape pilot workload in the future.

In addition, our own Lee Cross looks at the Boeing 737-100, an aircraft that nearly didn't make it off the drawing board, but went on to spawn one of the most successful commercial airliner families of all time. Elsewhere, Martin Needham examines the Airbus A330neo and whether this 'middle child' of Airbus's line-up has finally found its stride in the market.

Finally, as our front cover depicts, Richard Schuurman sits down with SAS CEO Anko van der Werff to discuss the airline's rebirth following its emergence from bankruptcy protection. With new strategies in place, SAS is looking ahead to a stronger, more stable future.

As always, we love hearing from our readers. Your feedback and insights help shape the magazine, and we encourage you to share your thoughts on this issue and what you'd like to see more of in the future. Details for contacting us can be found on page 83. Wherever you are in the world, I hope you enjoy this issue.

Thomas

Thomas Haynes
Editor

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COVER: *SAS Connect Airbus A320neo, EI-SIK (c/n 10716) lands at Manchester Airport in June 2022* AIRTEAMIMAGES.COM/ ENDA BURKE

BELOW: *Any guesses what aircraft this is...? That's right, this imposing nose belongs to an Airbus A220-300, namely N3203J (c/n 55289) of JetBlue Airways* AIRBUS

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Ryanair reveals European flight reductions

LOW-COST GIANT Ryanair is to make sweeping cuts to its European network as it responds to increasing airport fees and new government taxes.

Denmark is one of the countries affected, with the airline announcing it will close its two aircraft base at Billund from the end of March. Ryanair said that the move was due to the government's decision to introduce a new "harmful aviation tax", making Denmark "hopelessly uncompetitive compared to other EU countries". The new tax, introduced in January, means passengers must pay a €4 departure charge. The closure will see the loss of 1.7 million seats and 32 routes from the city. Staff at the base will be offered positions at other airports within the Ryanair Group network. Ryanair said that it will look to transfer operations to other countries such as Sweden, Hungary, and Italian regions, where aviation taxes are being abolished to stimulate traffic recovery and growth.

The airline will also remove an aircraft from its Rome/Fiumicino base, cutting its investment at the facility by €100m. Due to rising costs and flight restrictions, it will also reduce its expansion at nearby Rome/Ciampino. The Dublin-based carrier said airport costs were set to increase by 15% at Fiumicino and 44% at Ciampino. "These restrictive policies are damaging connectivity, tourism and jobs in Italy, particularly in Rome, where enhanced air connectivity is needed to support inbound tourism during the Jubilee year," the airline commented.

In Austria, Ryanair boss Michael O'Leary warned that increased airport fees and the country's €12 air traffic tax could limit its expansion in the country. Costs at the capital's Vienna International Airport have also risen, leading Ryanair to focus on smaller airports such as Linz and Salzburg. Across the border in Germany, six routes will be cut from Berlin/Brandenburg this summer, again due to higher operational costs. The affected routes include Brussels, Kaunas, Krakow, Luxembourg and Riga. Additionally, Ryanair will reduce the number of aircraft based in Berlin from nine to seven.

The move follows last month's announcement regarding its reduced flying schedule at several regional Spanish airports due to "excessive" airport charges from operator Aena. In December 2024, the airline also cancelled plans to commence operations from Paris/Orly after being awarded 840 slots for the summer 2025 season. Planned flights to Milan/Bergamo and Bratislava were cancelled as the airline continues to argue over increased taxes. (Photo Key-Martin Needham)

ITA pays homage to **Alitalia**

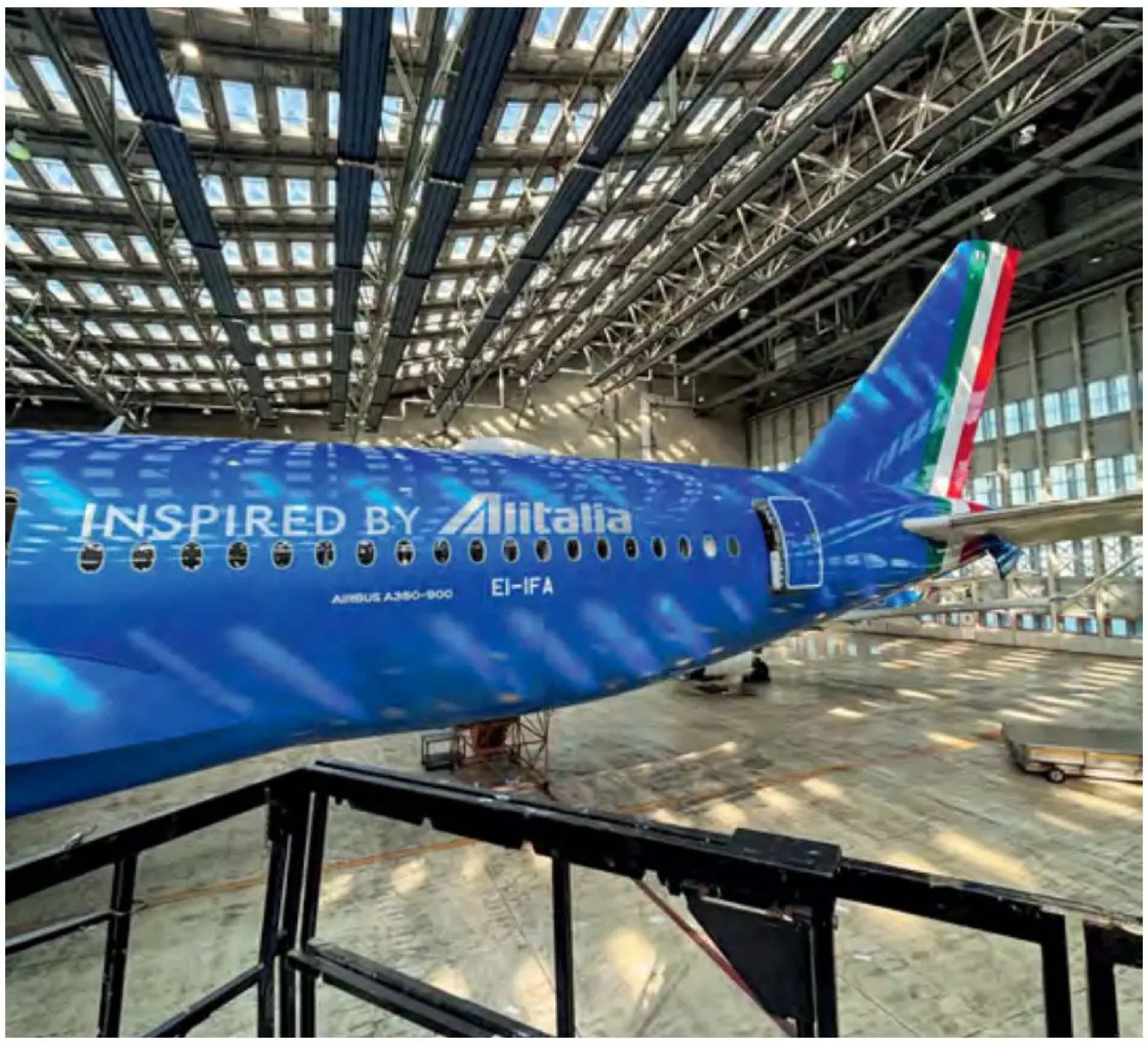
ITA AIRWAYS has launched an "Inspired by Alitalia" branding on three of its Airbus fleet. The Italian flag carrier announced the branding in September 2024, adding it to its app and website. The first aircraft to have the sticker applied is Airbus A350-941, EI-IFA (c/n 308), which was delivered to the airline in May 2022. The aircraft was then placed into service between Rome/Fiumicino and Tokyo/Haneda. For the 2025 summer season, two more Airbus jets, an A220-100 and an A321neo, will also have the titles applied.

In a statement, the airline said: "The Alitalia brand, a key asset owned by ITA Airways, honours the history of aviation and the country with its pioneering excellence in air transport. Through this concrete and ambitious project, ITA Airways aims to associate the Alitalia brand with its own distinctive ITA Airways logo, reinforcing its values of excellence in air transport that are universally recognised worldwide."

Meanwhile, the airline has begun the process of leaving the SkyTeam Alliance, which is expected to be completed by April 30. The move comes following the acquisition of a 41% stake in ITA Airways by the Lufthansa Group. The airline will then join the Star Alliance, which is expected to take place during the first half of 2026.

Integration of ITA Airways into the Lufthansa Group has also commenced, with members of the latter's Miles & More frequent flyer programme able to earn and redeem miles on all ITA services. In return, members of the Italian carrier's loyalty programme Volare will be able to redeem their points on all flights operated by Lufthansa, SWISS, Austrian Airlines, and Brussels Airlines.

From March 30, ITA will move its operations into Lufthansa Airlines Terminal 1 at Frankfurt and Terminal 2 in Munich, reducing passenger transfer times. ITA passengers will also be granted lounge access across some 130 lounges of the Lufthansa Group. From the start of the summer schedule, customers will also benefit from 100 new code-share connections and co-ordinated European flight schedules. (Photo ITA Airways)



Finnair pilot furore continues

FINNAIR HAS warned of the possibility of slashing 90 jobs in its pilot community as it enters the next phase of labour negotiations. Talks resumed between the airline and the Finnish Transport Pilots' Association (SLL) on February 12. Finnair has said that any industrial action could potentially threaten its wet-lease agreement with Qantas.

Announced in May 2023, the Helsinki-based operator deployed two Airbus A330 jets with the Australian flag carrier. Finnair crews staff the aircraft and operate flights from Sydney to Bangkok and Singapore, utilising aircraft that would otherwise have been surplus to requirements. This was due to the closure of Russian airspace, meaning the aircraft could not fly non-stop from Finland to Far Eastern destinations. The initial two-year deal is due for renewal this year.

Talks between SLL and the airline have been ongoing since last year. Over the past three months, industrial action, including standby and overtime bans, has forced the airline to cancel hundreds of flights. Finnair said that the standby ban could affect its Qantas operations, as its pilots may not be able to transfer from its Helsinki-Bangkok and Helsinki-Singapore flights.

"This impacts Finnair's ability to operate the flights as agreed, and Finnair has initiated discussions with its partner on future options for the co-operation agreement, with one option being the termination of the agreement. This would have a direct impact on the amount of work available to Finnair pilots," the carrier said.

However, SLL argued that these operations could be covered by pilots based in Sydney and that an agreement was reached last year regarding this operation. It said: "[We have] protected the Sydney operation throughout the negotiation process, and our intention is to ensure the reliability of these operations in the future." (Photo Finnair)

PLAY's **positive outlook**

DESPITE REPORTING heavy losses, the CEO of Icelandic low-cost carrier PLAY Airlines is said to be optimistic about the airline's future. In its 2024 financial results, published on February 17, PLAY posted a net loss of $66m, almost double the $35m loss posted in 2023, on revenues of $292m, up 4% from the previous year.

The airline said it carried some 1.6 million passengers during 2024, with an average load factor of between 83.4% and 85.3%. By the end of the year, it was flying to 42 destinations with a fleet of six Airbus A320neos and four A321neos.

In October, PLAY announced a transformation of its business model, moving away from transatlantic transfer passengers to a more leisure-focused point-to-point business. The airline's CEO, Einar Örn Ólafsson, said the business shift was now yielding "positive results". Indeed, the airline said that its sold seats to leisure destinations had grown by 18.4% and that the number of passengers flying from Iceland alone had increased by 17.1% to 477,000.

"The transformation of PLAY's business model is becoming increasingly evident, and its impact is reflected in our Q4 results", Ólafsson explained. "While our EBIT remains substandard, we saw a clear improvement in Q4, signalling that our revised flight schedule is already driving higher revenues and improved financials. Looking ahead to 2025, we are optimistic about continued progress."

PLAY has also moved into the charter and wet-leasing market while finding new projects for its fleet. A long-term ACMI deal has been negotiated with an unnamed European airline to deploy three of its aircraft from spring until 2027. The airline is also pressing ahead with stationing part of its fleet outside of Iceland and expects to complete the process of obtaining a Maltese AOC by spring this year. (Photo Vincenzo Pace)

PLAY
PLAY
TF-PPF
flyPLAY.com

in brief

UK leisure carrier **Jet2** has revealed that it expects several of its upcoming Airbus A321neo deliveries to be delayed. It said this will "incur additional operational costs to cover aircraft gaps in the peak summer flying programme." The Leeds Bradford-based airline expects to take delivery of 14 of the narrowbody jets by the end of this summer, bringing the number in its fleet to 23.

Paris/Orly-based **French Bee** is to launch direct flights from the French capital to Montreal/Trudeau from April 30. The announcement of its first service to Canada strengthens the low-cost leisure carrier's presence in North America, joining existing routes to San Francisco, Los Angeles, New York, and Miami. The four-times-weekly service, increasing to five-times-weekly during the peak summer season, will be operated by one of the airline's six-strong Airbus A350 fleet, which includes both the -900 and -100 variants.

Blue Islands has announced the launch of a new service from Jersey to Paris/Charles de Gaulle. The twice-weekly flight will commence on May 22, running until October 30. Blue Islands has said that the route will also return in 2026. CEO Rob Vernon said that the launch "cements our position as Jersey's largest carrier in terms of number of flights and choice of routes, with a total of 24 different airports (including our inbound charter activity) served in 2025." (Photo Blue Islands)

blueislands

Virgin Atlantic has extended its codeshare agreement with **WestJet** ahead of launching flights to Toronto/Pearson from London/Heathrow on March 30. WestJet will provide Virgin Atlantic passengers the chance to connect to 13 destinations across Canada, including Edmonton, Vancouver, Winnipeg and Ottawa. The pair will also co-locate at Toronto/Pearson's Terminal 3. Virgin last served the Canadian market in 2014 with a seasonal service between Heathrow and Vancouver.

Brussels Airlines celebrates African centenary

BRUSSELS AIRLINES celebrated 100 years of flying to the African continent on February 12. The first flight took off from Brussels to Léopoldville (now Kinshasa) in 1925, taking 51 days to complete the mammoth 8,000km trip.

The maiden voyage was operated by a Handley Page W.8F *Princess Marie-José*, with three Belgian aviators onboard, navigator Edmond Thieffry, pilot Léopold Roger, and engineer Jef de Bruycker. During the flight, the pioneering trio faced numerous obstacles, including poor weather, technical problems and the vast expanse of the African continent. The airline said their epic flight “laid the foundation for a lasting connection, one that Brussels Airlines continues to honour and strengthen today”.

Today, the airline offers connections to 18 destinations across sub-Saharan Africa. Its latest route to Nairobi, launched in June 2024, now brings the total share of sub-Saharan destinations within the Lufthansa Group to 56%. This summer, the airline will operate up to 56 weekly flights to the region, up 10% from last year.

It also flies to many niche destinations on the continent, which it says are often overlooked by other European carriers, including Banjul (The Gambia), Bujumbura (Burundi), Freetown (Sierra Leone) and Monrovia (Liberia). These routes primarily serve visiting friends and relatives (VFR) and trade traffic, and help reinforce economic and cultural ties.

Dorothea von Boxberg, CEO of Brussels Airlines, said: “Looking ahead, we will expand our long-haul fleet with an 11th Airbus A330 starting operations in June, followed by two more aircraft in the coming years. This year’s additional 10% capacity will strengthen the existing routes while we also explore new destinations as from next year. As we embark on the next century of aviation between Belgium and the African continent, we will continue to invest, innovate, and serve our passengers with our expertise, commitment and passion.” (Photo Brussels Airlines)

Loganair’s **hydrogen-fuelled** hopes

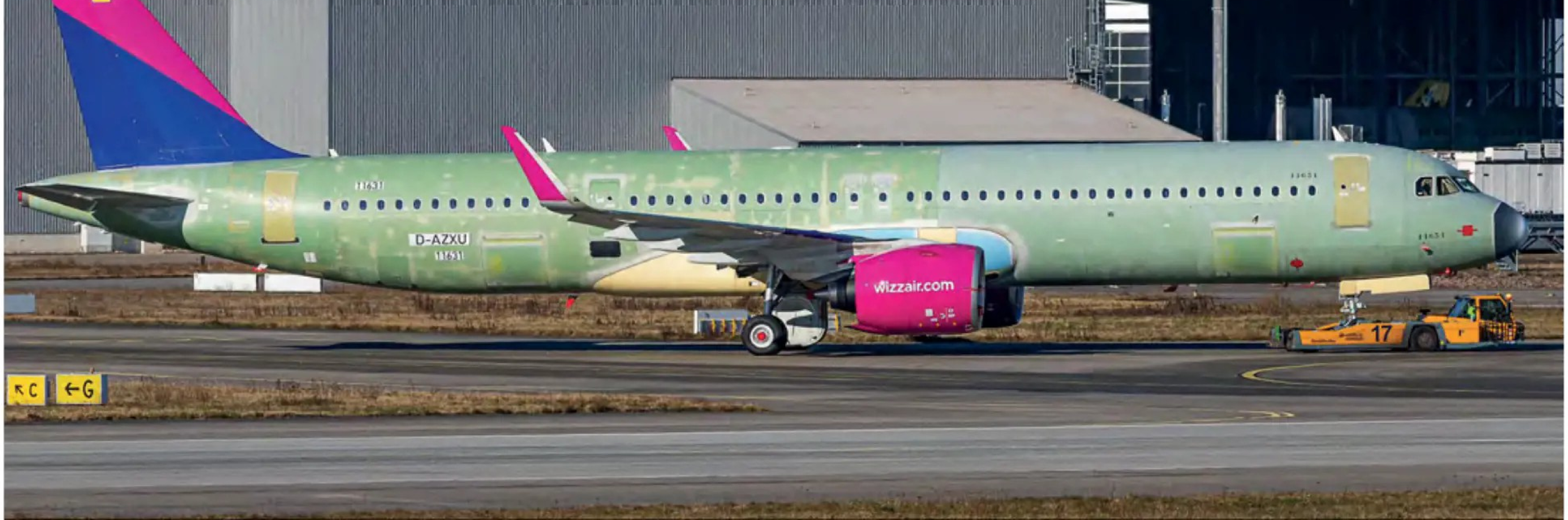
GLASGOW-BASED Loganair has laid out plans to deliver the world’s first hydrogen-powered commercial flights within the next five years. The airline said it had identified several routes from Orkney that would be ideal. The next phase of the project is to test the necessary infrastructure required to operate these services in the long term.

Kirkwall Airport has been chosen as a test site to explore how hydrogen infrastructure could be rolled out at airports across Scotland. As part of the Sustainable Aviation Test Environment (SATE), it has already been working with project partners, including Highlands and Islands Transport Partnership (HITRANS), Highlands and Islands Airports (HIAL), AGS Ltd, European and Marine Energy Centre (EMEC), and Orkney Islands Council, on the first phase of the project.

Additional funding has been secured from the UK's Civil Aviation Authority (CAA) as part of the ‘Hydrogen Challenge.’ This will enable further testing to be conducted and the development of the “necessary building blocks to allow the use of commercially viable hydrogen aircraft”.

Rebecca Borresen, director of safety and sustainability, said that the airline was working hard with “key industry partners” on a range of sustainable flight initiatives. This includes a partnership with Swedish firm Heart Aerospace on a hybrid-electric propelled aircraft. The ES-30 will have the capacity to carry 30 passengers on fully electrified flights of up to 124 miles. (Photo Loganair)

Wizz Air’s first **A321XLR**



The first of 47 Airbus A321XLRs for Wizz Air has been spotted at the manufacturer’s Hamburg/Finkenwerder facility. The aircraft, which currently wears the test registration D-AZXU (c/n 11631), is expected to be handed over to the low-cost giant on March 26. Wizz Air has confirmed that the type will be used to launch its new London/Gatwick to Jeddah route from March 31 JONAS BORGWARDT

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Somon Air seals 737 MAX deal

TAJIKSTAN CARRIER Somon Air has inked a deal with Dubai-based aircraft lessor DAE Capital to lease a pair of Boeing 737 MAX 8s. The agreement was signed at Somon Air's headquarters in Dushanbe by CEO Abdulkosim Valiev and DAE Capital president David Houlihan. The airline is expected to take delivery of the jets in 2026.

"The signing of this agreement is part of our long-term strategy to modernise the fleet and improve the quality of service," said Valiev. "The new Boeing 737 MAX 8 will allow us to expand our route network, increase operational efficiency, offer our passengers modern conditions for comfortable flights, and increase the frequency of flights."

Indeed, the aircraft could be used to launch flights to London after Somon Air secured permission from the Civil Aviation Agency of Tajikistan for both direct and via Tbilisi services to the UK capital.

The airline, founded as a competitor to the flailing flag carrier Tajik Air, commenced operations from Dushanbe International Airport in February 2008. According to planespotters.net, the airline currently has a fleet of four Boeing 737-800s and a pair of 737-900ERS. It also operates a Boeing 787-8 BBJ on behalf of the country's government. From Tajikistan, it flies to 25 airports across 13 countries, including Georgia, Germany, the UAE, Turkey, China, Qatar, Saudi Arabia, Iran, India, Russia, Pakistan, Kazakhstan and Uzbekistan. (Photo Somon Air)

SOMON AIR
Tajikistan
Mirzo Tursunzoda

Powered by **Russia**

DEVELOPMENT OF the Yakovlev SJ-100, the new incarnation of the Sukhoi Superjet 100, continues with preparations to fit one of the prototypes with the Russian-built Aviadvigatel PD-8 engines. Previously, the prototype airframe had been equipped with the Franco-Russian PowerJet SaM146 engines. However, United Aircraft Corporation (UAC) has now said that one of the test airframes is being readied for ground testing with the PD-8 after the engines were delivered to the SJ-100 production site in Komsomolsk. A third test aircraft, also fitted with PD-8s, is expected to join the programme soon.

UAC explained that eleven airframes that have already been assembled will undergo a retrofit with Russian components and systems once certification has been achieved. Test flights are scheduled for later this year.

The manufacturer has also continued testing the Russian-built powerplant for its single-aisle MC-21 airliner. The Aviadvigatel PD-14 engine has been developed for the -310 variant of the twinjet, which contains a higher number of local components and systems compared to the -300. Engine designer United Engine said that approval for low-temperature operations was granted to Aviadvigatel on December 25. The aircraft is now said to be conducting further flight testing with the PD-14 powerplants.

In other news, Yakovlev has announced a pre-tax loss of Rb5.1bn for 2024, down from the Rb34.7bn made in 2023. Despite the losses, the manufacturer managed to post a net profit of Rb6.5bn thanks, in part, to a deferred income tax of Rb11.6 billion. (Photo UAC)

SUKHOI
WFS
PowerJet

Il-114-300 certification continues

UNITED AIRCRAFT Corporation (UAC) has said that the flight-test programme for the updated variant of the Ilyushin IL-114-300 is continuing apace, with the prototypes conducting over 20 certification flights. In total, the aircraft have also completed around 70 sorties over 200 hours from the Lukhovitsy airfield near Moscow. It made its first test flight on December 16, 2020, from Zhukovsky Airport.

A second prototype joined the test programme in March 2024. UAC has said that a third example will be added to the programme this year to help speed up the development process. Russia hopes to produce around 70 Il-114-300s by 2030 and several aircraft for customers are already reported to be in production, with Moscow-based Red Wings Airlines announced as the launch customer in June 2024, after signing a contract for three airframes. Deliveries are scheduled to begin in 2026.

The 68-seat Ilyushin Il-114-300 is a modernised version of the Il-114 that first flew in March 1990. Powered by two Klimov TV7-117ST-01 engines, an updated and more powerful version of the original TV7-117S powerplants, the new -300 variant features various system and component upgrades including the increased use of composite materials and improved flight deck ergonomics. Russia decided to revive the programme in 2016, and UAC intends the type to replace the ageing Antonov An-24 and An-26. (Photo UAC)

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All-economy at **Oman Air**

MUSCAT-BASED OMAN Air has introduced an all-economy class operation with a dedicated fleet of Boeing 737 MAX 8 aircraft. The first, A4O-MO (c/n 63369), arrived on January 28, 2025, and is configured to seat 189 passengers.

Branded as Oman Air Connect, the new sub-fleet aims to provide more affordable travel options "while maintaining [the airline's] reputation for service and comfort". The fleet will comprise five 737 MAX 8 aircraft, primarily operating routes to the Indian subcontinent, the Middle East, and Africa. The initiative is part of Oman Air's strategy to enhance accessibility and flexibility for travellers.

"The way people travel has evolved, with greater accessibility and choice; at the same time, passengers still want to enjoy a comfortable journey," said Con Korfiatis, CEO of Oman Air. "With this all-economy fleet, we are adapting to these changing needs, providing our guests with more flexibility and choice without compromising on quality."

The flag carrier has been implementing a three-year financial transformation plan since 2023 to strengthen its market position and ensure long-term sustainability. In addition to introducing Oman Air Connect, it has enhanced its service offerings and is preparing to roll out upgraded in-flight entertainment.

With a network spanning more than 40 destinations, Oman Air operates a 42-strong fleet comprising a mix of widebody and narrowbody aircraft, offering three cabin classes. (Photo Boeing)

OMAN AIR
A4O-MA

Bumper profits at **Etihad**

ETIHAD AIRWAYS has reported a profit after tax of AED1.7bn (£376m) for 2024, attributing the strong performance to increased passenger demand, expanded operations, and improved efficiency. The airline stated that total revenue rose 25% year-on-year to AED25.3bn (£5.5bn), with passenger revenue reaching AED20.8 billion (£4.5bn) and cargo revenue increasing by 24% to AED4.2bn (£900m).

According to the Abu Dhabi-based airline, it carried 18.5 million passengers in 2024, a 32% increase from the previous year, with available seat kilometres (ASK) up by 28% and a passenger load factor of 87%. It expanded operations to more than 1,700 weekly flights and introduced over 20 new destinations, including Boston, Jaipur, Bali, and Nairobi. Over the past two years, the airline said it has increased frequencies on 25 existing routes and plans to launch more than ten additional destinations in 2025.

Etihad said its operating fleet grew to 97 aircraft, with the addition of six Airbus A321neos, a new fleet type, and the return of a fifth Airbus A380. It said the increased fleet size and aircraft utilisation allowed for greater connectivity while maintaining a fuel-efficient and modern fleet.

The airline also reported investments in customer experience enhancements, including a AED3bn (£660m) cabin retrofit programme, a dedicated premium call centre, and 200 digital upgrades.

Antonoaldo Neves, chief executive officer of Etihad Airways, said: "These results are testament to the dedication of our people who have worked together for a purpose, delivering our strategy. Their efforts have driven improvements in customer satisfaction measured across all cabin classes and numerous other touchpoints. Equally they have delivered sustainable, profitable growth while maintaining disciplined efficiency and a steadfast commitment to safety." (Photo Vincenzo Pace)

TAAG's dreams come true

LUANDA-BASED TAAG Angola Airlines has taken delivery of its first Boeing 787-9 Dreamliner, D2-TEQ (c/n 66877), as part of its ongoing fleet modernisation efforts. The widebody, which arrived in Luanda on January 30, 2025, is the first of four Dreamliners set to join the airline and is the first in its fleet to wear TAAG's new livery.

Originally built for MIAT Mongolian Airlines, the aircraft was first rolled out in the carrier's colours before being repurposed as a Boeing demonstrator. It was registered N8572C and painted in start-up carrier Riyadh Air's purple livery from June 2023 until October 2024, making appearances at both the Paris Air Show and Dubai Airshow in 2023. The aircraft first flew on May 17, 2022, and was later ferried from Everett/Paine Field to Luanda on January 29, 2025. It has yet to enter service with TAAG.

Nelson Pedro Rodrigues de Oliveira, TAAG's chief executive officer, stated that the addition of the 787-9 is a "pivotal step" in modernising the fleet, enhancing efficiency and versatility, and improving the passenger experience. The airline said the Dreamliner's 25% lower fuel consumption and CO_2 emissions will contribute to its long-term sustainability goals.

TAAG currently operates a 25-strong fleet comprising five Boeing 777-300ERs, three 777-200ERs, and eight 737-700s, a single 737-800, six De Havilland Canada DHC-8-400 turboprops and a sole Airbus A220-300. It serves 12 destinations across Africa, Europe, South America, and China. The airline plans to use the 787-9 for new long-haul routes, particularly to Europe, Asia, and North America. (Photo Boeing)

SalmanAir seeks additional A320s

SalamAir
A320neo

OMANI LOW-FARE carrier SalamAir has announced plans to expand its fleet with ten additional Airbus A320 aircraft over the next three years, responding to rising passenger demand. The airline has placed a formal request with "multiple aircraft leasing companies" as part of its five-year growth strategy, aiming to further strengthen its position in the budget travel market.

SalamAir, which commenced operations on January 30, 2017, currently operates a fleet of 14 aircraft, comprising six Airbus A320neos, seven A321neos, and a single A321-200P2F. During 2024, the airline experienced a 20% year-on-year increase in passenger numbers, totalling 3.2 million travellers.

Adrian Hamilton-Manns, the carrier's chief executive officer, highlighted the necessity of fleet expansion to develop more domestic and regional routes and introduce services to currently unserved destinations: "Our expansion over the next five years requires more aircraft to stimulate tourism in Oman and ensure faster sector growth," he stated. He also welcomed increasing competition in the low-cost segment, saying it would help drive lower fares for consumers.

SalamAir is set to receive two Airbus A321neos in 2025, bringing its total fleet to 15 aircraft. With the ten additional A320s, the airline is projected to operate 25 aircraft by 2028. (Photo Airbus)

LAM looks for new fleet

LAM MOZAMBIQUE Airlines (LAM) recently concluded its call for expressions of interest for the supply of Embraer E190 and Boeing 737-700 aircraft, according to an official tender notice issued by the airline.

The carrier invited "national and international suppliers" to submit proposals by February 7, 2025. According to reports, the airline is looking for three E190s and four 737s.

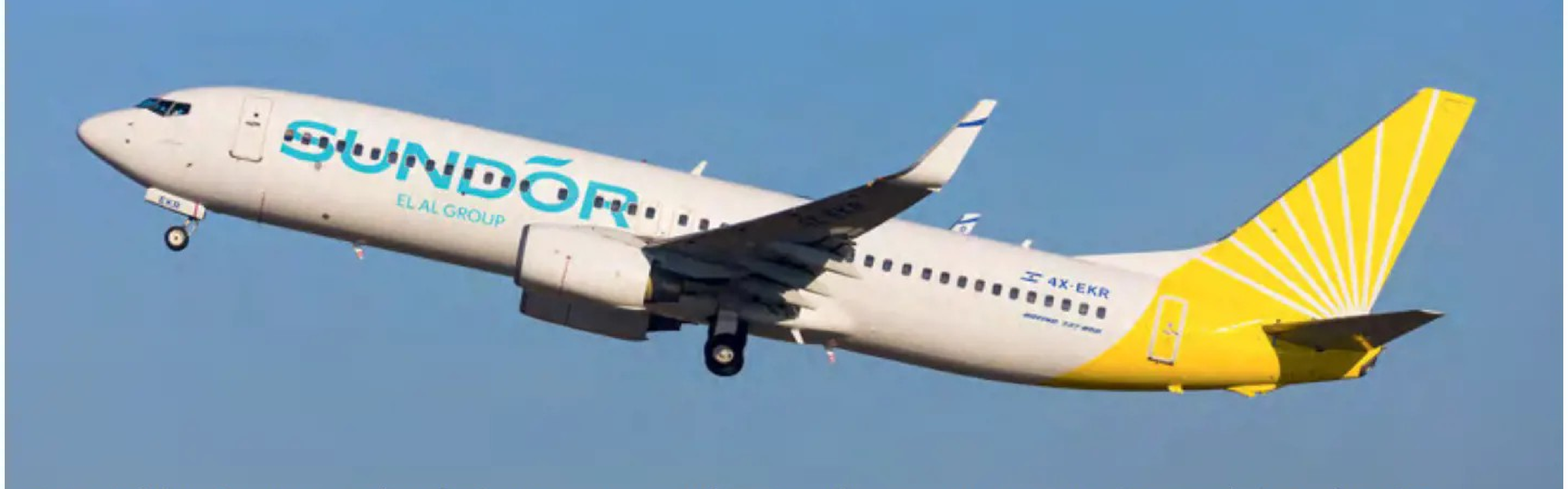
This procurement effort comes as the airline's in-house fleet – bar a single De Havilland Canada DHC-8-400, C9-AUV (c/n 4438) – remains inactive, with the African carrier relying on wet-leased aircraft to fulfil its current flying schedule.

LAM's two other Dash 8s, C9-AUW (c/n 4175) and C9-AUZ (c/n 4038), haven't flown since May and August 2024, respectively. Its sole 737-7Q8, C9-BAR (c/n 30674), has also been inactive since November 2024.

Wet-leased aircraft include Bombardier CRJ-900s from South Africa's CemAir, an Embraer ERJ145 from LAM subsidiary Moçambique Expresso, and a Boeing 767-300ER from Portugal's EuroAtlantic Airways, which until the route was canned in February, was used to operate the flag carrier's Lisbon link.

With the submission deadline for the expression of interest now passed, the airline is expected to review the proposals and proceed with the next steps in its fleet acquisition process. (Photo AirTeamImages.com/ Felix Gottwald)

New scheme for Sundor



El Al subsidiary Sundor has given its fleet a makeover with a new livery spotted on two of the carrier's Boeing 737s. Ex-Britannia Airways 737-804, 4X-EKR (c/n 30466), was the first to receive the treatment and now wears the yellow sun-themed tail design with blue Sundor lettering. A second example, 4X-EKM (c/n 30465), also received the new scheme when it was transferred from its parent at the beginning of December. The remainder of the six-strong fleet – which are being leased from Lithuanian airline KlasJet – are painted in all-white liveries AIRTEAMIMAGES.COM/JAN OSTROWSKI

in brief

Emirates has partnered with Nigerian airline **Air Peace** to expand its network to 13 more Nigerian cities. The interline agreement enables seamless travel from Dubai to Lagos, with onward connections to destinations including Abuja, Kano, and Port Harcourt. Emirates' link to Lagos is operated using a Boeing 777-300ER.

Libya's **Buraq Air** has taken delivery of its second Airbus A320, increasing its fleet size to three alongside a single Boeing 737-800. The ex-Cebu Pacific machine, 5A-BAB (c/n 4927), was delivered from Antalya to Benghazi/Benina on February 12, 2025. The 13-year-old jet was later positioned to the carrier's hub at Tripoli/Mitiga on February 19.

Lagos-based **NG Eagle** has acquired two Embraer ERJ145s from fellow Nigerian carrier XE Jet. The first, 5N-NGE (c/n 145360), is a former Air Caraïbes example delivered to the Guadeloupean airline on December 27, 2000. The second, 5N-BZM (c/n 14500842), began life with US regional Trans States Airlines on August 31, 2004, flying on behalf of United Express until 2016. XE Jet operated the jets from November 2022 and April 2021, respectively.

Iraqi Airways issued a request for proposals for wet-leased or ACMI aircraft for operations to Europe. The terms of the invitation outlined that Iraq would be the hub for the flights and that the contract would be based on an average of 150 hours. The carrier stipulated that the airline must have "several airplanes" and the aircraft "should be no more than 20 years old". The request comes amid continued efforts by the airline to secure the lifting of the blacklist ban imposed by the European Commission since 2015.

Nigeria's **Green Africa Airways** looks set to induct its first ATR 72-500 after a former Aurigny example was spotted at the manufacturer's facility at Toulouse/ Francazal wearing the Lagos-based operator's livery. The turboprop, which is currently registered F-HJGO (c/n 852), is yet to receive its Nigerian registration. When delivered, the aircraft will join the airline's existing three-strong fleet of ATR 72-600s.

FlySafair has been given 12 months to comply with a ruling made by South Africa's Air Services Licensing Council (ASLC) over the company's ownership structure. The ASLC found that the airline does not meet the requirement for 75% of the voting rights to be held by South African citizens. There were concerns the ruling might have forced it to be grounded until the issue was resolved.

Independent Spirit

SPIRIT AIRLINES' plan to reorganise through a Chapter 11 process and emerge with a stronger balance sheet was approved by the US Bankruptcy Court for the Southern District of New York on February 20. The plan includes equitising nearly $800m of debt, an equity infusion of $350m, and the issuance of $840m in new debt to bondholders. "In addition, Spirit will enter into a new revolving credit facility of up to $300m," the company said. "Spirit vendors, aircraft lessors and holders of secured aircraft indebtedness will not be impaired." The airline expects to complete the process by the end of March.

The Florida-based low-cost carrier has continued to operate since filing for Chapter 11 bankruptcy protection last November. However, hundreds of employees have been laid off, and hundreds of pilots furloughed, as the network was reduced, and 20 Airbus A320 Family aircraft were sold.

While the airline remains optimistic about the future, others are circling and looking towards industry consolidation. In January, it rejected a $2.1bn offer from Frontier Airlines, significantly less than the $2.9bn the same airline offered in 2022, when a merger would have made the combined entity the fifth-largest US operator. Frontier chief executive Barry Biffle stated on February 19 that his company's latest bid offered more value to Spirit shareholders than its standalone plan. According to Spirit, the latest proposal from Frontier "would deliver less in value" compared to its standalone restructuring efforts. Other airlines in the consolidation mix could include Sun Country Airlines and JetBlue Airways. (Photo Vincenzo Pace)

Early arrivals at **Allegiant**

ALLEGIANT AIR had expected to receive a solitary 737 MAX 8-200 from Boeing before the end of 2024, however it ended up with four, after receiving three more, sooner than expected. The Las Vegas-based carrier was a beneficiary of the airframer's production ramp up after a machinists strike ended in November. Some aircraft were already wearing its 'sunburst' livery but required "final touches" and were delayed due to the industrial dispute. Boeing rebounded from the production halt and delivered the jets more quickly than the airline had forecast. At the carrier's earnings call on February 4, Allegiant chief executive Greg Anderson said: "Capacity growth in 2025 will be achieved by higher aircraft utilisation, particularly during peak leisure demand periods."

The manufacturer expects to deliver a further 12 737 MAX 8-200s in 2025, although the airline is planning to receive nine, and it will gradually replace its existing Airbus A320-200 fleet. Anderson added: "Fortunately, we own the vast majority of our aircraft, which has allowed the fleet team to strategically sell older, underutilised A320 assets in a favourable market, resulting in substantial cash proceeds. The sale of these assets is aligned with our growing confidence in the delivery schedule from Boeing, giving the firmness of the aircraft market and the timing of our order."

As *Airliner World* went to press, the airline had received a further three MAX 8-200 aircraft in the first few weeks of 2025. (Photo Boeing)

United's millennium

UNITED AIRLINES has claimed it now has the largest commercial airline fleet in the world, following the delivery of its 1,000th mainline aircraft. Senior VP Patrick Quayle wrote in a LinkedIn post on February 12: "We received delivery of our 1,000th mainline aircraft – and we're the first airline ever to do so." The landmark aircraft, Boeing 737 MAX 9, N77584 (c/n 67624), was delivered to its Seattle/Tacoma hub on January 28, from nearby Boeing Field in Seattle. "While [United] already hold the claim as the world's largest airline by available seat miles, we are now also the world's largest airline by fleet size," he added. This is compared to 981 and 987 aircraft at American and Delta, respectively.

Citing US Securities and Exchange Commission (SEC) filings and year-to-date deliveries, Quayle's post also noted that the Chicago-based airline had grown its mainline fleet by 263 aircraft since 2017, when it operated 750 aircraft. Using Cirium data, the post said United will fly to 368 destinations for the year ending July 2025, compared to 358 at American and 313 at Delta.

As *Airliner World* went to press United's fleet further increased to 1,006 aircraft, comprising 81 Airbus A319-100s, 78 A320-200s, 31 A321neos, 530 Boeing 737s, 61 757s, 53 767s, 96 777s and 76 787 Dreamliners. It expects its fleet to grow to 1,054 aircraft by the end of 2025. (Photo Vincenzo Pace)

A320neo for Air Greenland

AIR GREENLAND is to add a first Airbus narrowbody to its fleet, with the introduction of an A320neo scheduled for delivery at the end of 2026, on a six-year lease from Carlyle Aviation Partners. The Nuuk-based airline said the aircraft will be adapted to Greenlandic conditions and painted in its distinctive red livery, before entering service in spring 2027, ahead of the peak season when it will operate services between Ilulissat and Copenhagen/Kastrup. Ilulissat airport is currently extending the runway from 2,772ft to 7,217ft, and building a new terminal. Once complete, in 2026, the west coast facility will be able to accommodate direct flights from North America and Europe.

Jacob Nitter Sørensen, Air Greenland CEO said: "The delivery time for new Airbus aircraft is currently six to seven years, so we have chosen to lease the aircraft to be ready when the new international airport in Ilulissat opens and to gain financial flexibility as the route is still new."

The carrier said the aircraft will complement its sole A330-800, which it received in December 2022, and operates to Copenhagen. The airline, which has eight De Havilland Canada Dash 8-200s, has stated that several Air Greenland's Dash 8 pilots will be retrained to fly the A320neo and that this will not affect the domestic operations of the Dash 8.

(Photo Airbus/Artem Tchaikovski)

Engine woes at JetBlue

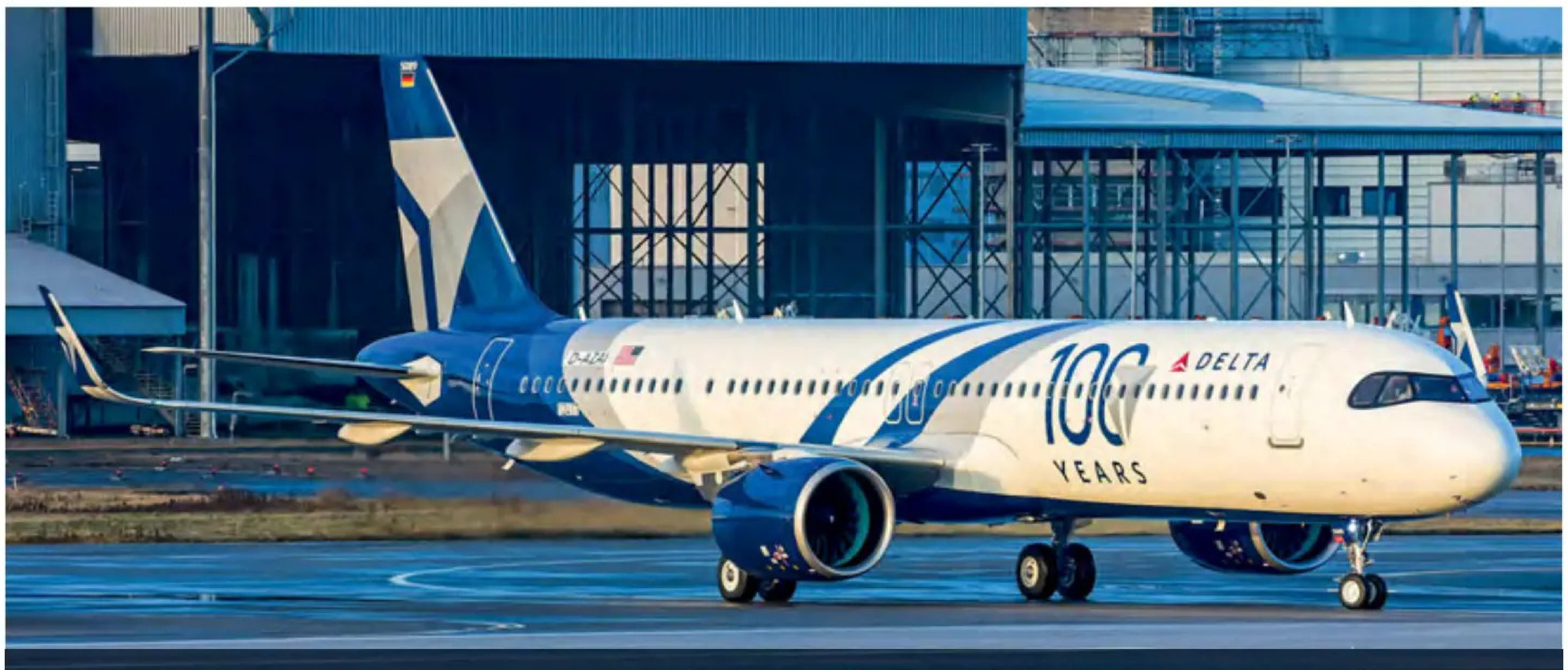
JETBLUE AIRWAYS revealed the time that it takes for one of its Pratt & Whitney PW1100G geared turbofan (GTF) engines to return to service once taken off-wing for inspections and repairs. During 2024, the airline was bedevilled by the grounding of an average of 11 Airbus A321neos and A220-300s at any one time and said: "The company currently expects each removed engine to take approximately 360 days to complete a shop visit and return to a serviceable condition."

It believes worse is to come. In a filing with the US Securities and Exchange Commission on February 14, Ursula Hurley, JetBlue's chief financial officer, said the company anticipated "hitting peak AOG" (aircraft on ground) within the next "one to two years". Pratt & Whitney has agreed financial compensation with several affected airlines, but has yet to do so with JetBlue. "Settlement negotiations are taking a while," Hurley said. "We want to ensure that we settle with something that is fair and acceptable."

Elsewhere the airline is exploring tie-ups with other US carriers and a potential revival of its Northeast Alliance with American Airlines, which was ended after a 2021 ruling stating it violated antitrust laws. At the Barclays Industrial Select Conference on February 19, JetBlue president Marty St George said: "We're talking to multiple airlines." An opportunity to revive the NEA via appeal still exists through a writ of certiorari to the US Supreme Court. Other potential alliances could include Alaska Airlines, Frontier Airlines, American Airlines and even Southwest Airlines.

JetBlue has also expanded its relationship with TAP Air Portugal with a reciprocal loyalty programme. Frequent flyers with either airline can now earn and redeem points using the programme of their choice when flying across either network.

Special schemes for **Delta 100**



As Delta Air Lines celebrates its centenary, it awaits the delivery of its latest Airbus A321neo to add to the 69 currently in the fleet. Wearing a '100 Years' special livery, N589DT (c/n 12417) undertook its first engine runs at the manufacturer's Hamburg/Finkenwerder facility on February 5, sporting its test registration D-AZAI. The twin-class layout will feature 20 business and 174 economy seats. The narrowbody joins A350-941, N527DN (c/n 720), which wears a similar scheme and is also awaiting delivery to the Atlanta-based carrier DIRK GROTHE

in brief

Canadian leisure carrier **Air Transat** and Madrid-based **Air Europa** have initiated an interline partnership intended to expand their respective reaches into the other's domestic markets. It offers a single-ticket check-in with baggage checked to final destinations for passengers with multi-city itineraries. The Montreal-based airline which focuses on streaming domestic passengers through its Eastern Canadian hubs and across the Atlantic Ocean, stands to build its presence in the Spanish market.

Sun Country Airlines has begun increasing freight-hauling activities on behalf of Amazon, having received the first of eight additional Boeing 737-800 cargo aircraft that it will deploy for the online retailer this year. The move will see its cargo fleet expand to 20 aircraft, which will fly under an amended agreement with Amazon. Chief executive Jude Bricker expects the carrier's cargo revenue to double from its roughly $29m fourth-quarter total by "this time next year."

Southwest Airlines has cut more than 1,750 corporate jobs, including senior management roles, in its first large-scale cost savings. About 15% of positions will go by the end of the second quarter according to CEO Bob Jordan: "We are at a pivotal moment as we transform Southwest Airlines into a leaner, faster and more agile organisation." The airline expects full-year savings in 2026 to be about $300m.

US regional carrier **Air Wisconsin** plans to lay off hundreds of workers as it switches away from operating for **American Airlines** and towards charter and essential air service flying. The agreement with American ends on April 3 and it plans to lay off 219 managers and salaried employees at its Milwaukee office and 294 union-represented pilots, flight attendants, dispatchers, and machinists at its Appleton base. It's pursuing alternative flying opportunities, which it expects to announce in the coming weeks.

Los Angeles will welcome a new connection on June 3, when **Norse Atlantic Airways** inaugurates a new service from Athens. The service will operate four-times weekly using its fleet of nine Boeing 787-9 Dreamliners. Chief executive Bjorn Tore Larsen said the carrier "expects the uptake to be positive [and open] more transatlantic options for our customers". The airline already serves Los Angeles from London, Paris and Rome.

Hainan to offload 787-8s

HAINAN AIRLINES has announced plans to sell or lease its nine Boeing 787-8 Dreamliner aircraft as part of efforts to optimise its fleet structure and reduce operating costs. The company disclosed the decision in a filing with the Shanghai Stock Exchange on January 28, 2025.

According to the filing, the aircraft will be disposed of through direct sales, leasing, or a lease-to-sale arrangement, with the final transaction terms determined via competitive negotiations. The sale represents approximately 2.59% of the company's total fleet and is not expected to have a significant impact on its core business, assets, or revenue.

"[The sale] will lower airline operating costs and improve fleet profitability, which is in line with the company's future strategic planning," Hainan Airlines stated in its announcement. The company also noted that the plan has received approval from its board of directors, though it still requires approval from shareholders.

Some of the aircraft are currently pledged as collateral with the China Development Bank's Hainan Branch as part of Hainan Airlines' financial restructuring plan. The airline will need to complete the necessary procedures to release these before finalising any transactions.

The Beijing-based carrier – which operates both the -8 and -9 variants of the Dreamliner – accepted its first -8 in July 2013, with the last being delivered in March 2015. Powered by General Electric GEnx-1Bs, the widebodies are configured to seat 213 passengers in a two-class layout. (Photo Boeing)

海南航空
Hainan Airlines
B-2722

Return of the **MAX**

INDIAN LOW-COST carrier SpiceJet reintroduced its first Boeing 737 MAX 8 into service on January 28 after several months of grounding. However, VT-MXC (c/n 60645), was withdrawn from use again the following day after completing nine flights.

The airline has been working to restore its fleet, with plans to bring ten aircraft, including four 737 MAX 8s, back into service by mid-April 2025. To facilitate this process, SpiceJet entered into agreements with StandardAero, a US-based MRO provider, and CFM International, the manufacturer for the type's LEAP-1B engines.

The return of the MAX is intended to help SpiceJet expand operations on high-demand routes, including Jeddah and Riyadh, and to improve cost efficiency with the jet's reduced fuel consumption and lower maintenance requirements.

Since October 2024, the airline has expanded its fleet by adding ten aircraft, including three previously grounded jets and seven newly leased aircraft – namely six 737-800s leased equally from Smartwings and Corendon Airlines Europe. This, the airline said, has allowed for the introduction of more than 60 new flights in the past three months.

The first MAX to be reintroduced, VT-MXC, operated a flight from Jeddah (where it had been stored) to Thiruvananthapuram in southern India on January 18, before formally re-entering service on January 29. Despite its brief return, it was taken out of operation a day later in Delhi.

The airline's six other MAX 8s remain in storage, with four in Hyderabad, one in Delhi, and another in Kolkata, as the carrier continues its efforts to reinstate the fleet. (Photo Boeing)

Korean Air inaugurates A350 ops

KOREAN AIR has successfully commenced operations with its pair of newly acquired Airbus A350s, with initial services launching on January 27. The first A350-941, HL8598 (c/n 689), was delivered on December 27, 2024, followed by a second example, HL8597 (c/n 681), three days later. Originally bound for Asiana Airlines, the aircraft were redirected to Korean Air following the merger of the two carriers.

The airline's first A350-900 has been operating twice-daily between Seoul/Incheon and Osaka/Kansai, while a second has been serving the Incheon-Fukuoka route once daily. Following its initial deployment on short-haul routes to Japan, the A350s began operating on the Seoul-Taipei route in March, before expanding to long-haul destinations, including Madrid and Rome, in the second half of this year.

Korean Air's A350-900s feature a 311-seat configuration, comprising 28 business class seats and 283 economy seats. Dubbed Prestige Class, the premium cabin adopts a 1-2-1 staggered layout, ensuring direct aisle access for all passengers. Economy follows a 3-3-3 configuration, with a pitch of 32-33in.

Korean Air undertook extensive preparations for the A350's entry into service, including pilot training conducted over six months at the Airbus Asia Training Center in Singapore. The airline also implemented a technical maintenance programme, with dedicated teams completing EASA-approved type training courses. Additionally, Korean Air finalised an agreement with Rolls-Royce for Trent XWB engine maintenance support.

KOREAN AIR
ASIANA AIRLINES

The Korean flag carrier is due to operate both the A350-900 and A350-1000 variants as part of its long-term operational strategy. (Photo AirTeamImages.com/ Mehrad Watson)

First **Qantas A321XLR** breaks cover

QANTAS
Spirit of Australia
D-AXXE

The first of 28 Airbus A321XLRs ordered by Qantas has left the paint shop at Airbus' Hamburg/Finkenwerder facility emblazoned in the flag carrier's full livery. The jet, which still wears its test registration, D-AXXE (c/n 12323), will be registered VH-OGA, and named Great Ocean Road. *Seen here on February 15 without its engines, it is due to be powered by Pratt & Whitney PW1133GR-JM powerplants, the same as those selected by Wizz Air for its XLRs. Qantas will operate the XLR to destinations in Southeast Asia and the Pacific Islands, replacing the Boeing 737 over the next decade. Delivery of the first aircraft is expected in April 2025* DIRK GROTHE

Thai Airways inks A321neo deal

BANGKOK-BASED THAI Airways has entered into a lease agreement for eight Airbus A321neos as part of its narrowbody fleet expansion programme. The aircraft, leased from SMBC Aviation Capital, are scheduled for delivery in 2026 and 2027.

The new additions will support Thai Airways' efforts to enhance its regional network while improving operational efficiency and passenger experience.

Commenting on the agreement, Conor Stafford, head of airline marketing at SMBC Aviation Capital, said: "The Airbus A321neo aircraft will not only boost Thai Airways' operational efficiency, but it will also enhance the overall customer experience with more comfort and advanced features while also promoting a more sustainable aviation industry. We are delighted to support Thai Airways in the growth and modernisation of their fleet, and we look forward to many years of working together."

SMBC Aviation Capital is supplying the aircraft from its direct Airbus orderbook. Thai Airways' current fleet comprises 79 aircraft consisting of 20 A320-200s, five A330-300s, 23 A350-900s, five Boeing 777-200ERs, 17 Boeing 777-300ERs, six 787-8 Dreamliners and three 787-9s.

IndiGo looks Norse

LOW-COST CARRIER IndiGo has announced a damp lease agreement with Norse Atlantic Airways for one of its Boeing 787-9 aircraft, which was scheduled to begin operations in March 2025.

The initial term of the lease – which includes the aircraft, flight crew and maintenance, but excludes cabin crew – is six months, with the possibility of extending the agreement for up to 18 months, subject to regulatory approvals. Both IndiGo and Norse have expressed interest in exploring further opportunities to increase collaboration between the two airlines.

This partnership is part of IndiGo's broader strategy to increase its long-haul capacity and strengthen its international presence, catering to the growing demand for travel to and from India. The airline continues to focus on enhancing its global network, particularly as international travel demand continues to rise.

This lease agreement follows a firm order by IndiGo placed in May 2024 for 30 Airbus A350-900s, with options for 70 more, set to be delivered starting in 2027.

Within the widebody space, the Indian low-cost carrier currently leases two Boeing 777-300ERs from Turkish Airlines which it uses for daily flights to Istanbul from Delhi and Mumbai.

(Photo Norse Atlantic Airways)

NORSE
flynorse.com

in brief

South Korea's **Asiana Airlines** is expected to retire its last Boeing 767-300 from passenger operations at the end of March, ending the carrier's near 35-year use of the type. According to *Aeroroutes*, 767-38E, HL7528 (c/n 29129), is scheduled to operate the Seoul/Gimpo-Jeju route four times per day until March 29 when an A330-300 takes over.

Malaysia Aviation Group (MAG) has signed an agreement with the government of Sarawak in Malaysia, finalising the transfer of ownership of MAG's regional subsidiary **MASwings**. This follows an earlier Memorandum of Understanding (MoU) signed on October 27, 2023. The transfer is set for completion by the year's end, with MASwings continuing operations without disruption. Reports suggest the government plans to rename the carrier AirBorneo.

Boeing forecasts India and South Asia's commercial aircraft fleet will grow nearly four-fold over the next 20 years, driven by a 7% annual rise in air traffic. The airframer's Commercial Market Outlook for 2024-2043 predicts the region will be in line to accept deliveries of 2,835 airliners comprising 2,445 single-aisles, 370 widebodies and 20 freighters.

Air India and **Virgin Australia** have signed a new codeshare partnership which enables the former to place its AI code on flights operated by the latter. Air India customers travelling from Delhi to Melbourne or Sydney will be able to connect onto 16 destinations in Australia and New Zealand with a single ticket and baggage will be checked through the entire journey.

Qantas has upgauged all of its routes from Adelaide to the 74-seat De Havilland Canada DHC-8-400, from the smaller 50-seat -300 variant of the turboprop. The flag carrier – through its regional subsidiary **QantasLink** – operates more than 50 return flights per week between the south Australian city and Mount Gambier, Port Lincoln, Kangaroo Island and Whyalla.

Owing to ongoing engine availability challenges across its fleet, **Air New Zealand** has announced that it will not be returning to Seoul for its previously scheduled seasonal flights from October 2025. The airline's final service from Incheon to Auckland will take place on March 29, 2025, marking the conclusion of this route's seasonal service.

BA buys Boeing

BRITISH AIRWAYS is to acquire the Boeing hangar facility and MRO business at London/Gatwick. According to the carrier, the move will secure jobs at the site and expand the airline's presence at the London hub. A new subsidiary called British Airways Engineering Gatwick (BAEG) will be created, which will join its existing engineering operations in South Wales (BAEW) and Glasgow (BAMG). Staff employed by Boeing who work at the facility will, subject to an employee consultation process, be transferred to the new subsidiary later this year.

Described as a "significant investment", the move forms part of the airline's strategy to expand its engineering operation. Longer term, it's expected the carrier will recruit additional staff and grow this new facility. British Airways' existing engineering activities at Gatwick are a "vital part" of the airline's operation, and its role and capability as a key engineering hub or 'line station' in the airline's network will be enhanced with the hangar now under BA ownership, the airline said.

Andy Best, BA's chief technical officer, said: "This announcement will help us to be the very best in the business by bringing in the skills and expertise of former Boeing colleagues and adding a large, modern hangar to our portfolio of engineering facilities. It will support the reliability of our entire fleet".

Taking over the Boeing facility will enable BA to continue to carry out minor maintenance on 777 aircraft at the hub. This increased capacity will allow BA to in-source some scheduled heavy maintenance work on its A320/321 fleet. Additionally, it will enhance its capacity to carry out unscheduled repair work, as well as providing additional maintenance resilience, and relieving capacity challenges at other locations across the BA network. According to the airline, carrying out more 777 and A320/A321 maintenance at Gatwick will reduce the need to ferry these aircraft to other operational bases. (Photo British Airways)

Ups and downs at **Airbus**

AIRBUS IS expecting to deliver 820 commercial aircraft during 2025, up on the 764 it dispatched in 2024, which comprised 75 A220s, 602 A320s, 30 A330s and 57 A350s. The increase in deliveries during 2024 enabled its Commercial Aircraft division to generate a 6% rise in revenues to €50.6bn. Adjusted earnings for the commercial aircraft activity reached €5.09bn, an increase of 5.7%. As it unveiled full-year financial results on February 20, Guillaume Faury, CEO, said: "We achieved strong order intake across all businesses in 2024, with a book-to-bill well above [unity], confirming the solid demand for our products and services. We delivered on our 2024 guidance in what was a testing year for Airbus."

However, the airframer is expecting an early dip in single-aisle deliveries as a result of supply-chain issues with engines for its A320neo Family aircraft. In reference to assembled aircraft awaiting engine arrival, Faury said: "This is already affecting us as we begin to have so-called gliders." Pratt & Whitney deliveries are low but in line with revised plans, but the situation at CFM International, which produces LEAP-1A powerplants, is "very different" as the manufacturer recovers from production issues affecting parts supply, including hurricane damage to a Florida plant.

While CFM has supported Airbus in the last few months to ensure deliveries to customers, Faury added: "We knew there'd be some missing hardware at the beginning of this year, and this is impacting us and our customers." It seems the situation will result in low delivery numbers that are lower than they were last year in the first quarter, before normalising in the second half of the year.

Airbus Deliveries

West Air accepted delivery of Airbus A319neo, B-32JM (c/n 12123), on January 14, after a ferry flight from Hamburg/Finkenwerder to Chongqing/Jiangbei via Muscat. Configured to carry 144 passengers in a single-class cabin, it is one of five A319s in the airline's fleet AIRTEAMIMAGES.COM/FINN PETERSON

Airbus delivered the following aircraft in January:

A220-300	3	JetBlue Airways (2); Delta Air Lines
A319neo	2	West Air; China Southern Airlines
A320neo	7	easyJet; China Eastern Airlines; China Southern Airlines; Avolon [Air Astana]; Qantas Airways [Jetstar Airways]; flynas; Macquarie AirFinance [flyadeal]
A321neo	11	China Southern Airlines; China Eastern Airlines (2); China Airlines; IndiGo (3); United Airlines (2); Wizz Air; NAS Aviation Services [Turkish Airlines]
A350-900	1	Emirates
A350-1000	1	Japan Airlines
Total	25	
Annual total to date	**25**	

Boeing Deliveries

Air China accepted delivery of Boeing 737 MAX 8, B-20DQ (c/n 60924), on January 22, after a ferry flight from Everett Field to Beijing/Capital via Honolulu and Guam. The aircraft first flew in August 2020, but was delivered new to the airline, and is seen here with its test registration V1IMAGES.COM/PRESTON FIEDLER

Boeing delivered the following aircraft in January:

737 MAX	40	9 Air; AerCap (2); Air China (2); Air India; Air Lease Corporation (3); Akasa Air; Alaska Airlines; Allegiant Air; American Airlines; BOC Aviation Limited (2); China Eastern Airlines; GOL Linhas Aereas; Jackson Square Aviation (3); Korean Air; Oman Air; Ryanair; Shandong Airlines; Shenzen Airlines; Southwest Airlines (5); TUI Airways (2); United Airlines (7); Xiamen Airlines
777F	1	Ethiopian Airlines
787-9	3	Korean Air; TAAG Angola Airlines; United Airlines
787-10	1	All Nippon Airways
Total	45	
Annual total to date	**45**	

EASA approves P&W **A321XLR** engine

EUROPEAN REGULATORS have validated certification for several higher-thrust Pratt & Whitney PW1100G (geared turbofan) engine models that were previously approved by the US Federal Aviation Administration (FAA). The European Union Aviation Safety Agency (EASA) approved the PW1133G1, GR, GAR and G1R versions of the engine on February 7.

The powerplants offer various features including hot-day take-off boost and reduced go-around thrust and are designed for the Airbus A321neo and A321XLR. Reduced go-around thrust is activated by the aircraft's electronic engine control and delivers lower power than the maximum rated take-off thrust.

All four models had been certified by the FAA on December 12 last year and Rick Deurloo, president of commercial engines at Pratt & Whitney said at the time: "The longer range and higher payload capability of the Airbus A321XLR aircraft will provide customers with expanded route flexibility to more destinations. Operators will benefit from the GTF's best-in-class fuel efficiency and the lowest carbon emissions available for single aisle aircraft."

Globally, 13 customers have selected the engine to power their 217 A321XLRs currently on order. Low-cost carrier Wizz Air, who signed for 47 of the aircraft, is one such airline, and its first example is currently at the manufacturer's Hamburg/Finkenwerder base, due to enter revenue service on March 31, serving a new route from London/Gatwick to Jeddah. (Photo Pratt & Whitney)

EASA certification for **E-Freighter**

EMBRAER'S E-FREIGHTER, the E190F, has been fully certified by the European Union Aviation Safety Agency (EASA) and is now set for global operations. Certification from the US Federal Aviation Administration (FAA) and the National Civil Aviation Agency of Brazil (ANAC) was achieved in 2024.

E-FREIGHTER

The E-Freighter programme began in 2022, and it first flew in April 2024, followed shortly after by its first public appearance at the Farnborough Airshow last July. The aircraft was created to fill a gap in the air cargo market and to replace older, less efficient models. Embraer said its converted freighters will have over 40% more volume capacity, three times the range of large cargo turboprops, and up to 30% lower operating costs than larger narrowbodies. The aircraft's maximum structural payload is 13,500kg.

The São Paulo-based manufacturer derived the E-Freighter from its popular E190 regional jet. Martyn Holmes, chief commercial officer, Embraer Commercial Aviation, said: "EASA certification is a key milestone in our passenger-to-freighter conversion programme. This is an exciting market and we have developed the perfect aircraft to fill the gap, meeting the demand globally for faster deliveries, not just to metro areas, but all regions. The E-Jets are a global success with a large footprint worldwide, we are now ready to offer the highest standard of freighter solution to customers globally."
(Photo Embraer)

AIRBUS A350F
A350

A350F deliveries slip

AIRBUS HAS pushed back the entry into service of its A350 freighter, from 2026 to the second half of 2027. The news was revealed during the Toulouse-based manufacturer's full-year financial results briefing on February 20.

Specific supply chain challenges "notably with Spirit AeroSystems, are currently putting pressure on the ramp up of the A350 and the A220" production. Spirit supplies aerostructures to Boeing and Airbus including the central fuselage section of the A350, but the Wichita-based firm is currently undergoing a restructuring following Boeing's decision to purchase the company, a process which will involve separating the Airbus operations.

Guillaume Faury, Airbus CEO, said the first flight-test A350F would enter the final assembly line this year, and that the airframer continues to target a ramped-up production rate of 12 A350s per month in 2028. It has firm orders for 63 A350Fs, with 60 attributed to ten identified customers. (Photo Airbus)

Uplift at **Boeing**

BOEING MADE progress in ramping up 737 MAX deliveries during January, in what was the first month of full production since last year's machinists strike ground the assembly system to a halt. It delivered 45 aircraft, the most in any month since December 2023, which incorporated 40 737 MAXs, including five to Southwest Airlines, seven to United Airlines, and a pair to TUI Airways. It also waved off seven examples to Chinese carriers, which is notable as it has been working for several years to divest a stockpile of the jets it accumulated during a multi-year delivery pause to Chinese carriers. The halt was initiated by the 2019 grounding of the 737 MAX but continued through geopolitical tensions well after the restriction was lifted.

The Seattle-based airframer also received 36 new orders during the month, which included two 777Fs, and 34 737s from unidentified customers. Separately, the manufacturer has moved 38 777X orders to a special accounting bucket known as ASC 606 – essentially a location for orders that may not complete due to factors such as the financial condition of purchasers, geopolitical issues and aircraft development delays. It ended January with a backlog of 5,554 aircraft comprising 4,296 737s, 109 767s, 427 777s and 722 787s.
(Photo Boeing)

Doncaster Sheffield reopening gains more support

MUNICH AIRPORT International (MAI), the German airport's management and consultancy arm, has been announced as a new strategic partner for Doncaster Sheffield Airport (DSA). The City of Doncaster Council has also established a new company, FlyDoncaster, to oversee the facility's running as it gears up for its planned reopening in spring 2026.

MAI will provide operational and management services and will be assisted by UK-based FP Airports, which specialises in providing "strategies for retaining viable aviation infrastructure".

Doncaster
Sheffield

Doncaster Sheffield Airport opened its doors to commercial flights in April 2005 but closed in November 2022 after the owners at the time, Peel Group, decided that the facility was no longer financially viable.

MAI managing director Lorenzo Di Loreto said that the firm was "proud to be part of the reopening of DSA" and planned on helping develop the facility "into a top modern and competitive airport".

Meanwhile, the Mayor of Doncaster, Ros Jones, who has been a key driving force behind the airport's revival, stated: "Reopening our airport is my number one priority. Munich Airport International has the pedigree in the field of aviation. They share our ambition for a successful airport, and they bring a wealth of experience, capacity, and influence to work with us to deliver a thriving airport.

"The team at FP Airports has worked with us creatively to put together the right solution for DSA and we are confident that the reopening and future operation of Doncaster's airport is in good hands.

"This major announcement that I am making today enables us to press ahead with the necessary airport mobilisation activity to see the airport – which I proudly call the people's airport – to reopen in spring 2026." (Photo Doncaster Sheffield Airport)

Sønderborg set for Saab digital ATC

SAAB DIGITAL Air Traffic Solutions will provide its remote air traffic control (ATC) technology to Sønderborg Airport, becoming the first in Denmark to implement such a system. Its implementation will allow the airport to improve operational efficiency and remove the need to build a new physical tower while retaining local ATC jobs.

Sønderborg will receive the latest Saab remote tower system model, the r-TWR Compact RTM, which is better suited to small and regional airports. Saab said the system "offers features that support safe and efficient digital Automatic Flight Information Service (AFIS) operations, allowing the airport to remain fully operational throughout the transition". The new digital tower will also include the TactiCall VCS (Voice Communication Solution), supporting "seamless communication between ground control and air traffic, as well as between various ground operations".

The move forms part of Sønderborg's DKK212m (£24m) transformation plan, as the facility looks to become a "key aviation hub" for southern Denmark.

The airport's CEO, Jákup Sverri Kass, commented: "This marks a historic step for our airport and the region. With Saab's Digital Tower, we are modernising in a way that keeps our airport efficient and connected while retaining jobs locally. It is exciting to see Sønderborg Airport lead the way as Denmark's first digital tower airport." (Photo Saab)

Group calls for urgent and fundamental reform of Heathrow

A CAMPAIGN has been launched by a coalition of airlines and airport sector companies, calling for "urgent and fundamental" reform to how London/Heathrow is run. The Heathrow Airline Operators' Committee (AOC), Arora Group, International Airlines Group (IAG) and Virgin Atlantic have all come together to launch 'Heathrow Reimagined: A Better Hub for Britain'. The move comes after the UK government revealed that it was backing the construction of a third runway at the UK's only hub airport.

In a scathing statement, the group said that in the 15 years since the last major review into UK aviation by the Competition Commission, Heathrow – now labelled Europe's most stressful airport – had become the most expensive in the world. It said that passengers are paying an incredible £1.1bn more per year than if charges were the same as the equivalent major European facilities and that rather than being a source of national pride, the airport had failed to modernise, letting down consumers, airlines and the British economy.

Now, the group is calling on the CAA to investigate what has gone wrong and address the root causes. They want to see the airport regulated "for the benefit of consumers, businesses, and the UK economy". To achieve this, the group says there needs to be a wholesale reform, and it plans to work with industry, government, and the CAA.

Shai Weiss, Virgin Atlantic CEO, said: "The current regulatory model at London Heathrow is simply not fit for purpose and does not sufficiently constrain Heathrow's monopoly power." Luis Gallego, CEO of IAG, which represents around 50% of the airport's monthly seat capacity, added that he wishes to see Heathrow "become a leading global airport once again". (Photo Heathrow Airport)

Sky View

Insights and opinions on the industry's hottest topics

By Jonathan Hinkles, 30-year UK airline executive

Only a few months into office, our not-so-new government has pledged its support for expansion of the UK's airports. One could be forgiven for thinking this might be partly inspired by a desperate need to find good news to announce. Even if so, it's a welcome step towards alleviating the capacity constraints which have held back our major airports.

Home for me for the last 25 years has been on Gatwick's doorstep. Although prospering, the airport has become much less noisy in that time. I've lived here long enough to recall the 747 Classics heading off to Nairobi late every night. The Airbus A380 now setting off from Gatwick with far more passengers registers barely a rumble, if indeed you hear it at all. Roaring Boeing 737-200 departures have been replaced by sleek Airbuses. It's all very different – and quieter – than it was.

As could be expected, news of Gatwick's growth hasn't been universally well received. In among the posts of missing dogs or offering carpet cleaning on our village Facebook page, I was intrigued to see the Communities Against Gatwick Noise and Emissions campaign group pop up.

Gatwick's growth in recent years has largely come from new international carriers such as Air India, Singapore Airlines and China Eastern, bringing visitors and inward investment to the UK. Yet "expansion of Gatwick will just lead to more holiday flights draining money out of the UK economy," cried the campaign group. Really? I don't remember our neighbours popping out to Shanghai for two weeks all-inclusive.

"Emissions from Sustainable Aviation Fuel are the same as carbon jet fuel when burned," was another claim. It simply repeated this false claim when I challenged it. "Say no to new flight paths," it said. Redesign of our airspace will cut emissions by enabling aircraft to take more direct routings through our skies. I pointed this out and asked whether the group was really opposing a reduction in emissions when such cuts were one of its campaign objectives.

Its answer was to ban me from its Facebook page, hardly cementing its credentials as an organisation committed to free speech and polite debate. Perhaps my labelling of its campaign as "inept and inert" tipped them over the edge.

Yet even if such campaigns are inept and inert, this alone cannot absolve the airport developers from their social responsibilities. Public transport access to most of the UK's airports is woeful, a legacy of planning failures in the 1950s and 1960s. Our generation has a duty to do our utmost to fix that when considering airport expansion. Airspace redesign is a decade overdue and made all the more difficult today by the growth in air travel that has happened in that time.

Major airlines have, quite reasonably, begun to challenge the costs of this development too. The airlines and passengers of today cannot be expected to fund developments to reward the airport operators of tomorrow. There's an unspoken subtext that those airlines will also face fresh competition from new entrants taking up slots created by the opening of new runways. This is most certainly a concern, but arguments about self-preservation tend to carry little weight in the court of public opinion.

Heathrow has made much of the support of the UK regions for its third runway. Yet if both it and Gatwick wish to truly cement that support, commitments to the UK regions must form part of development consents. Some years ago, Heathrow suggested that 15% of slots on a new, third runway would be ringfenced for domestic flights. If we're genuinely serious about sorting out the UK's transport infrastructure, this commitment needs to be revived and enshrined in permission to expand both Heathrow and Gatwick.

Beyond that, building runways alone will not guarantee regional connectivity. As well as making slots available, it's vital that regional airlines can afford to use them. Charges for regional aircraft at Gatwick today are especially high, even more noticeable since Heathrow reformed its charges a couple of years ago after pressure from me and others to take the sting out of some of its policies. Regional airlines need assurances that they will be expected to pay no more per passenger journey than larger aircraft such as the Airbus A320s used on most short-haul flights.

We literally have one chance left to fix our country's air travel infrastructure and our government would be failing in its duty unless it ingrains suitable safeguards for regional connectivity into the plans it will soon be asked to approve. AW

> "The airlines and passengers of today cannot be expected to fund developments to reward the airport operators of tomorrow"

BETTING ON BELGRADE

Siddharth Ganesh looks into the recent history of Air Serbia, its re-emergence as a state-owned carrier, and ahead to Expo 2027

What eventually became Air Serbia was founded in 1927 as Aeroput and existed until 1948 when its assets were liquidated and nationalised to emerge seamlessly as Jugoslovenski Aerotransport or Jat Airways. This iteration of the airline lasted until October 2013 when Etihad Airways purchased 49% of the carrier and management rights for five years from the Serbian government, and it was renamed Air Serbia. Over the years that followed, the government gradually repurchased the airline in tranches, with Etihad selling its remaining shares in November 2023. It is based at Belgrade/Nikola Tesla but also has focused operations at Niš/Constantine the Great where it operates five year-round routes, and Morava where it is the only resident airline.

2027 is coming

Expo 2027 will shine a spotlight on Belgrade, and at the same time will create an opportunity for flag carrier Air Serbia. Plans at the airline are well under way, and it is making changes to be ready to capture the extra demand that will be generated by the event. Its third and much-awaited Airbus A330-243, YU-ARD (c/n 1486), joined the fleet last October and the aircraft has a special role to play. It entered service with an 'EXPO 2027 Belgrade, Serbia' livery, which delivers the message 'Come to Belgrade' on its rotations to China and the US. The scheme serves as a marketing opportunity for the airline to help develop business and

YU-APJ
Air S
ATR 72
YU-A

BELOW: ***A flock of aircraft on the apron at Belgrade***
ALL IMAGES AIR SERBIA UNLESS STATED

tourism in the western Balkan nation. The patterns of the livery represent the deep and timeless connection between Belgrade and its two rivers, the Danube and the Sava, both of which are vital components in the capital city. The landlocked nation expects to welcome more than three million guests to Expo 2027, between May 15 and August 15, which coincides with the airline's busy summer season.

In an interview with *Airliner World*, Jiří Marek, CEO of Air Serbia, explained where he and his team wish to take the airline in the years to come: "We would like to position Air Serbia as the leading regional carrier in what we call the wider Balkan region, which is broader than just the countries of the former Yugoslavia, where we already serve 17 destinations."

In terms of commercial aviation, this area of The Balkans is one of the quieter places in Europe and most national carriers have faced problems, gone bankrupt, or operate very small fleets. However, Wizz Air, the low-cost Hungarian airline, has continued to establish itself as a strong player in most countries across this region. Wizz is a direct competitor to Air Serbia, operating services from Belgrade to 13 countries, and is also gaining momentum in Niš, Serbia's third-largest city, from where it operates two routes. But Air Serbia offers something different, and aside from the demand for point-to-point routes, its rising popularity among transfer passengers through Belgrade could be one of its key assets. Marek said: "Our ambition is to expand beyond this region, offer seamless connectivity via Belgrade and to become the airline of choice for local communities."

ABOVE: ***Airbus A330-243, YU-ARB (c/n 973), sporting Nikola Tesla colours, departs on a long-haul flight from New York/JFK***
VINCENZO PACE

Gateway Belgrade

Commenting on recent history, Marek noted: "Before the COVID-19 crisis, our network had been generating around 25% of transfer passengers. However, our significant growth and reaching critical mass in the post-COVID period with us flying to more than 80 destinations, laid down the foundations for increasing the share of transfer flow which is currently over 40%."

Air Serbia's post-pandemic trajectory has allowed it to establish itself as a reliable airline for neighbouring Balkan nations, channelling passengers through Belgrade to several European countries, the US and the airline's hot market – China. If the airline continues to grow it will need Belgrade/Nikola Tesla Airport to be able to handle the load and offer a pleasant and positive airport experience, which is crucial in ensuring a seamless transfer option. The airport has managed to up its game since starting a €262m modernisation project in 2019, improving infrastructure, capacity, commercial services, comfort and the customer experience. The complementary growth of the airline and the airport is helping to foster Serbia's economic and tourism development, while enhancing the nation's global connectivity.

»

YU-APE
ATR 72
YU-ALO

Jiří Marek, Air Serbia CEO

EXPO
2027
BELGRADE
SERBIA

A330-243, YU-ARD (c/n 1486), joined the fleet in October 2024 with the 'EXPO 2027 Belgrade, Serbia' special livery

Air Serbia fleet

Registration	Aircraft	C/n	First flight	Arrived
YU-ALW	ATR 72-600	1474	12/2017	13/05/2022
YU-ALX	ATR 72-600	1466	11/2017	11/07/2022
YU-ALY	ATR 72-600	1259	06/2015	27/01/2022
YU-ALZ	ATR 72-600	1083	04/2013	28/11/2022
YU-ASA	ATR 72-600	1122	11/2013	05/01/2023
YU-ASB	ATR 72-600	1139	03/2014	16/06/2023
YU-ASC	ATR 72-600	1284	11/2015	07/06/2024
YU-ASD	ATR 72-600	1159	06/2014	31/08/2023
YU-ASE	ATR 72-600	1294	12/2015	08/05/2024
YU-ASF	ATR 72-600	1232	02/2015	11/04/2024
YU-APA	Airbus A319-132	2277	08/2004	09/04/2014
YU-APB	Airbus A319-132	2296	09/2004	23/05/2014
YU-APC	Airbus A319-132	2621	11/2005	08/10/2013
YU-APD	Airbus A319-132	2335	10/2004	19/09/2014
YU-APE	Airbus A319-132	3252	09/2007	18/11/2013
YU-APF	Airbus A319-132	3317	11/2007	27/12/2013
YU-APK	Airbus A319-132	2032	08/2003	22/05/2019
YU-APL	Airbus A319-132	4282	04/2010	25/11/2020
YU-APM	Airbus A319-132	4301	04/2010	01/12/2020
YU-APN	Airbus A319-132	3911	05/2009	19/05/2022
YU-APH	Airbus A320-232	2645	12/2005	01/04/2014
YU-APO	Airbus A320-232	6388	02/2014	13/10/2022
YU-APS	Airbus A320-232	4716	05/2011	12/04/2023
YU-ARB	Airbus A330-243	973	11/2008	24/04/2021
YU-ARC	Airbus A330-243	1236	06/2011	16/11/2022
YU-ARD	Airbus A330-243	1486	12/2013	07/10/2024
YU-ARE	Airbus A330-243	1521	04/2014	Due
YU-ATB	Embraer E195	19000213	10/2008	06/09/2024
YU-?	Embraer E195	19000184	06/2008	Due

The modernisation work was completed during August 2024 and involved refurbishment of the existing terminal, plus a 430,000sq ft expansion including the addition of 12 boarding gates and new retail concessions. Related work included the new Air Serbia lounge, which at 6,800sq ft is double the size of its predecessor and has the capacity to welcome 160 guests at any one time. Eleven additional aircraft parking stands were also built and access routes to the airport were reconfigured. A second 'inserted' parallel runway, 12R/30L, measuring 11,483ft, was constructed to serve as a back-up, and opened in June 2023. This allowed renovations to the original 11,155ft runway, which were completed in November 2024, and it has now been designated 12L/30R. There is insufficient lateral clearance to be able to operate both runways simultaneously. By the end of 2024 the airport had handled 8.36 million passengers, up 5.3% on 2023, and up 36% up on its pre-pandemic peak in 2019.

Long-haul

The airline operates a simple long-haul strategy, the US to the west and China to the east. These routes are operated by three A330s: YU-ARD, YU-ARB (c/n 973), and YU-ARC (c/n 1236). A fourth, YU-ARE (c/n 1521), is due to join the fleet and will also wear the 'EXPO 2027 Belgrade, Serbia' special livery. The A330s possess slightly different seating configurations, with business offering between 18 and 22 seats and economy 236 and 250 seats.

In June 2016, the carrier began direct services to New York/JFK and almost a decade later it remains its prime long-haul route. With a large Serbian diaspora in the state of Illinois, services to Chicago/O'Hare were restarted in May 2023, after a 30-year hiatus. No other airline in the region offers transatlantic services, which infers a competitive advantage for Air Serbia and generates passengers from connecting services in the adjacent nations of North Macedonia, Bosnia and Herzegovina, Montenegro, Croatia, Bulgaria and Slovenia.

Flying eastbound, the airline operates to Guangzhou/Baiyun and Shanghai/Pudong. Plans began as market research during the pandemic and, based on the analysis, China was selected for integration into the long-haul network. Marek said: "For a few years, Air Serbia was serving only the North Atlantic region, and we

> "We would like to position Air Serbia as the leading regional carrier in the wider Balkan region"

AirSERBIA
SERBIA
SERBIA

BELOW: ***A319-132, YU-APB (c/n 2296), taxiing for departure at Belgrade*** were looking for another opportunity to diversify our long-haul portfolio. China was a natural opportunity due to several factors – a visa-free regime, free trade agreement and Belgrade's natural geographical position contributing to becoming a seamless hub for beyond connectivity towards Europe from China."

Services to Tianjin began in December 2022, and with China still in the midst of COVID-19 restrictions it was the only available airport, despite being just over 90 miles from Beijing/Capital. Pairing its proximity to Beijing via a high-speed 30-minute train connection with lower airport costs, it seemed like a good bet and the route sparked curiosity. However, it was withdrawn in November 2024. Services to Guangzhou/Baiyun began in September 2024, and to Shanghai/Pudong in January this year, and codeshares with China Southern Airlines are already in place, as Marek revealed: "We recently signed a memorandum of understanding with China Southern to further develop synergies in all possible areas, including codeshare, which will not only comprise the Chinese domestic sector but also international markets beyond." Passengers flying to Guangzhou will have access to 20 destinations in the Chinese carrier's network, with travellers coming the other way having access to 21 cities.

According to Marek, the Chinese market is promising for the airline, providing both leisure and corporate passengers, with demand spread throughout the year. The peak period lies in January and February, when transatlantic traffic is in its fallow season. This creates reliable and stable year-round utilisation of the Airbus A330 fleet for the airline, generating constant revenue, rather than facing seasonality and having aircraft on the ground or flying to unprofitable destinations.

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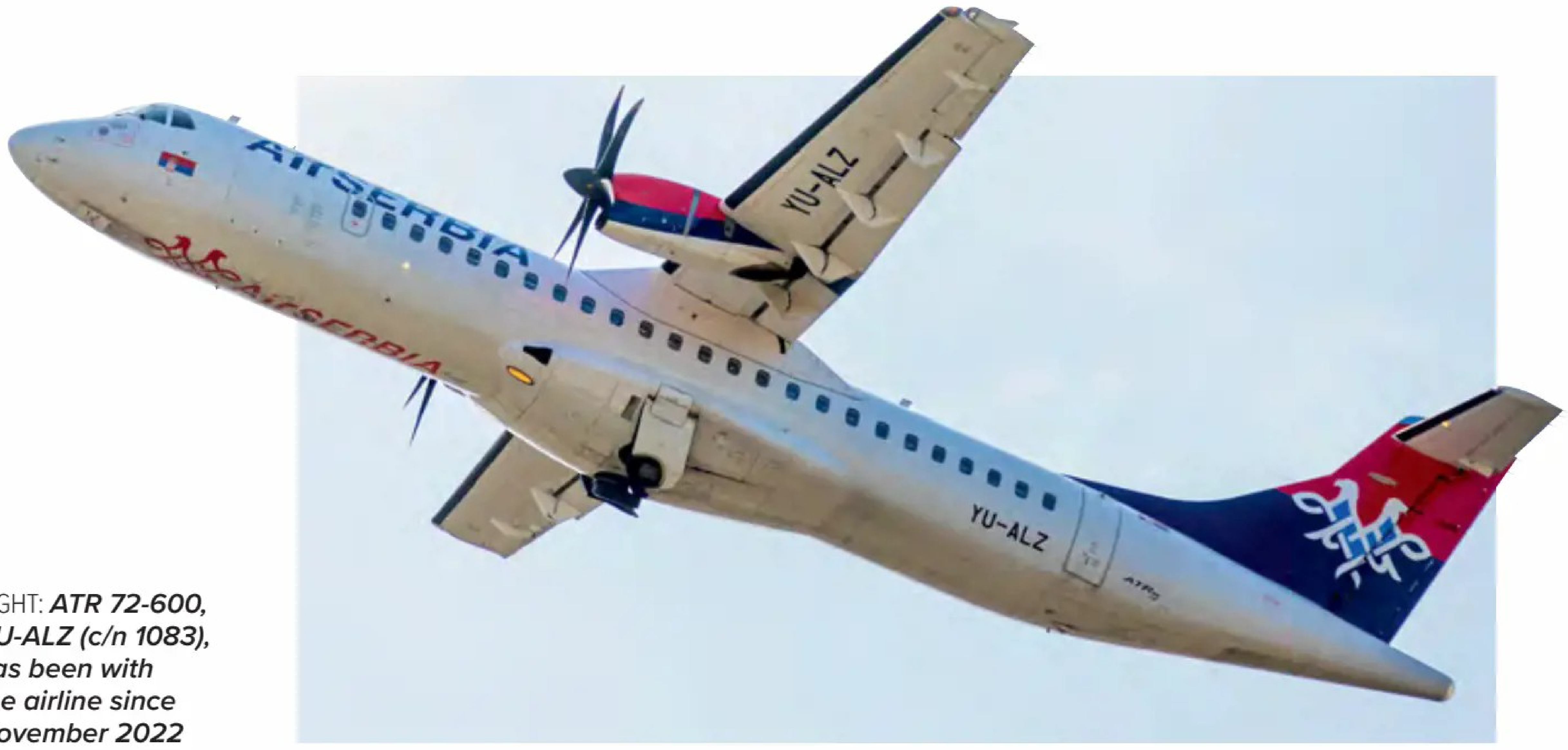

RIGHT: ***ATR 72-600, YU-ALZ (c/n 1083), has been with the airline since November 2022***

RIGHT: ***Inside the rear economy cabin on one of the airline's A330s***

BELOW: ***Serbian inventor Nikola Tesla (1856-1943) made contributions to the alternating current electricity supply system***

ABOVE: ***The new gates at Belgrade/Nikola Tesla*** VINCI AIRPORTS/ STEFAN JOVANOVIC

> **“By the end of 2023, Etihad’s remaining shares in the airline were sold back to the government and ownership passed in entirety to the state of Serbia”**

Closer to home

During 2023, the airline added 23 new short- and medium-haul routes across Europe, increasing its total of year-round destinations to more than 45, with over 20 seasonal routes also in operation. Not being an EU member meant that after the Russian invasion of Ukraine, the airline maintained its services to Kazan, Sochi, Moscow/ Sheremetyevo and St Petersburg/ Pulkovo. At present, Moscow sees a double-daily service six days a week, and St Petersburg sees a single daily service with both routes operated by A320 Family aircraft.

During 2024, the airline completed the renewal of its ATR 72 fleet, retiring its three 72-200s and three 72-500s to be replaced by ten 72-600s. The utilisation of these aircraft is quite high, with up to eight daily sectors, operating to destinations up to two hours away, such as Prague. Having seen a significant rise in destination count during 2023, last year proved to be more slow-paced and stable, as industry supply-chain problems affected the airline, according to Marek.

Moving forwards

With a burst of rapid recent growth followed by stabilisation and consecutive years of profits, the focus is shifting towards improving the passenger experience, as Marek noted: “Our focus has always been on the passenger experience and product. However, there is a vast difference between an airline that is in transformation and one which has already reached profitability.”

Marek went on to highlight some examples: “In 2023, we reintroduced the free sandwich option on our flights beyond 2.5 hours. We introduced a new amenity kit, and we are still offering the pyjama service on our long-haul flights. Furthermore, we are currently in the construction process of the new ticketing desk at the airport, the new business lounge, [and] premium check-in. We will further continue with the development of our service. Since our fleet is already diversified and features different cabin types, we are constantly looking for ways to further upgrade the cabin look and experience with potentially new ergonomic seats and to standardise the overall product.”

During the 2010s, Air Serbia was backed by Etihad Airways, which helped it transform and rebrand as it evolved away from Jat Airways. During Etihad’s stewardship, it accepted delivery of the ten aircraft that comprise the A319-100 fleet and the three aircraft that encompass the current A320-200 roster. But by the end of 2023, Etihad’s remaining shares in the airline were sold back to the government and ownership passed in entirety to the state of Serbia. As Expo 2027 draws ever closer and the carrier approaches its centenary the same year, we may yet see further expansion including new routes – the Balkan eagle is an airline with a hungry appetite for the future.

LEFT: ***Air Serbia Airbus A319-132, YU-APK (c/n 2032), on arrival at London/Heathrow*** VINCENZO PACE

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Invaluable Connec

Since 2010, Hebridean Air Services (HAS) have been providing vital inter-island air services from their base at Oban Airport, situated approximately five miles north of Oban, near the village of North Connel in the Argyll and Bute area of Scotland.

Hebridean was the brainchild of George Cormack, a well-known name in Scottish aviation and particularly within the Islander community. As well as founding Hebridean, Cormack's endeavours include running Cumbernauld Airfield and Cormack Islander Aircraft, one of the two main places that Hebridean's maintenance work is undertaken, the other being Multiflight at Leeds Bradford Airport. In 2016, the multi-faceted aviation company, Airtask Group, acquired HAS and added it to its dynamic portfolio.

The scheduled routes that Hebridean has been operating since its creation are Public Service Obligation (PSO) routes, awarded by Argyll and Bute Council. A PSO air service is often awarded for a route that is essential in nature but under normal circumstances would not be economically viable for an airline to operate. In the scope of Hebridean's routes, these are essential to the small island communities they serve.

Hebridean takes over

In spring 2010 HAS was asked to take over the PSO routes from Oban due to the collapse of Highland Airways, the airline that previously operated the routes from Oban to the Inner Hebrides. Martin McWilliam, ground operations manager describes that hectic period: "The council contacted us and we set up a hastily arranged schedule over the Easter bank holiday weekend. On the Monday we had the network up and running in time to maintain the following week's schedule."

These early efforts would forge what is a small, close-knit team, working hard to achieve a lot with very little. When asked about the footprint of Hebridean at Oban, McWilliam said: "Not much! We have one Oban-based pilot, Dixie, on customer services, Julie Angell looks after the aircraft on the

BELOW: ***Britten-Norman BN-2B-26 Islander, G-HEBS (c/n 2267) was delivered to the airline in 2007 and was later joined by sistership G-HEBO (c/n 2268)*** MATTHEW STEVENS

tions

Hebridean Air Services provides vital links to the islands off Scotland's West and Northwest coast. **Ben Stanley Hall** headed to this remote corner of the British Isles to see this little airline that makes a big difference

ground (Julie was the pilot at Oban for ten-plus years before she retired) and me. There is also some support from head office (flight ops/accounts etc)."

Hard working Islanders

The mount of choice for the short inter-inland services is the aptly named Britten-Norman Islander. Currently HAS operates a pair of BN-2B-26s: G-HEBS (c/n 2267) and G-HEBO (c/n 2268). Both rolled off the Bembridge, Isle of Wight production line between August and October 1993 as G-BUBK/L respectively and share similar histories. HEBS joined Oriental Air Bridge in Japan as JA5318 flying to islands off Kyushu from its hub at

The short field performance of the Islander means that even with nine passengers on board, it only needs a fraction of the 1,264m (4,147ft) runway on offer at Oban BEN STANLEY HALL

G-HEBS
Hebrid

The "strong and capable" Islander is perfect for the short routes operated by HAS BEN STANLEY HALL

Nagasaki, while HEBO joined New Central Aviation as JA5319 linking Chōfu Airport near Tokyo with four of the islands in the Izu archipelago off the coast of Honshu.

G-HEBS joined Hebridean in 2007 while five years on, G-HEBO joined in 2012. After that, Bravo Oscar was sold to Islander Aircraft, owned by Hebridean's founder, George Cormack, although it was brought back into Hebridean service after HAS began operating the Stornoway to Benbecula route.

The Islander is perfect for the short routes, which also have short turnarounds and operate into fairly austere locations with minimal support. When asked what it is like to operate the Islander, Hebridean pilot, Clare Tector said: "The Islander is a very honest aeroplane, with a time-proven design. It is strong and capable. On the downside, it's noisy so Active Noise Reduction (ANR) is a must, and after a long day of flying, I definitely feel it."

BELOW: *On the flights from Oban, for safety reasons the routing and altitude is often dictated by the local weather* MATTHEW STEVENS

Remote Destinations

As per the PSO, the islands of Colonsay, Coll and Tiree are served from Oban. Historically Islay was also served, however this wasn't covered in the PSO as it was self-funded by the airline and ended on September 25, 2023. At Coll and Colonsay, Hebridean is the only scheduled service, whereas Tiree benefits from an (at least) daily Twin Otter flight from Glasgow operated by Loganair.

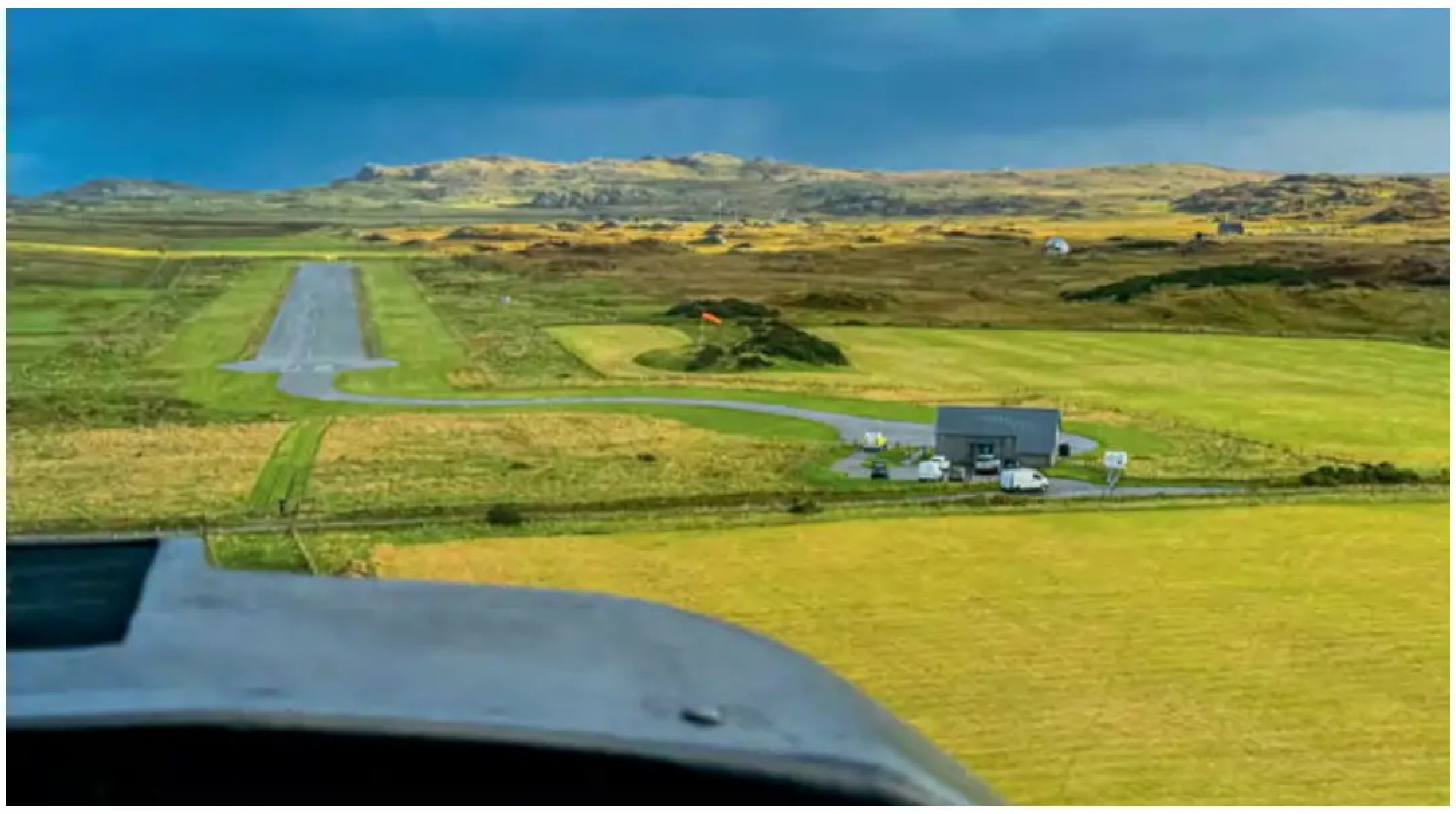
On the flights from Oban, for safety reasons the routing and altitude is often dictated by the local weather. With the short sectors (ranging from 15 minutes between Coll and Tiree and 35 minutes between Tiree and Oban), cruising is done at a fairly low altitude. Usually, this is around 2,000ft but can be between 1,000ft and 6,000ft. Visual Flight Rules (VFR) are adhered to as standard, although the Islanders are Instrument Flight Rules (IFR) equipped. Hebridean operate their aircraft with a single pilot, which allows for nine passengers (although only seven seats are sold on scenic flights due to row three having limited views).

The three destinations served from Oban have their own unique challenges. Coll and Colonsay are both small facilities with a single unlit

runway with only 1,640ft (500m) of asphalt, whose almost identical terminal buildings were part-financed by the European Union. Tiree, being an ex-RAF station, has better facilities and multiple runways set out in the triangle pattern popular during World War Two (two of the three runways are still in operation).

The winds that impact the islands are often much stronger than on the mainland and can cause some issues. Tector explained: "There are no instrument approaches at three of the four scheduled locations, including Oban. Weather planning is crucial to be sure we can get there and back. We use multiple sources of information – from official weather reports and the Met Office to local webcams – to build a picture. Despite this, the west coast weather can still throw a curveball and flexibility is critical. Mull has a habit of influencing the weather between Oban and the destination airports of Coll, Tiree and Colonsay, so even when it looks like it should be OK, Mull's weather can scupper plans. At the airfields themselves, the winds can be quite spicy and some of the strips don't have a lot of space, so approaches have to be accurate with no wiggle room."

Another concern is birds, with the destination islands home to large bird populations both resident and transient, so the pilot must be alert to the increased risk of bird strike. A slightly more unique concern is that there are often large deposits of goose excrement along the paved areas, which makes the surface extremely slippery!



TOP RIGHT: ***On short finals to runway 02 at Coll. This image shows just how remote the airfield is on this small island*** MATTHEW STEVENS

BN-2B
Islander

MIDDLE RIGHT: ***The Islander's flight deck would be considered workmanlike, much like the aircraft's design*** MATTHEW STEVENS

Seasonal schedules

When the four islands were covered, the routings were triangular and ran twice a day, two days a week. On Mondays and Wednesdays, Oban-Coll-Tiree-Oban was flown, reversing to Oban-Tiree-Coll-Oban in the afternoons. On Tuesdays and Thursdays, Oban-Colonsay-Islay-Oban in the mornings and Oban-Islay-Colonsay-Oban in the afternoons.

»

The parent company

Airtask was founded at Norwich Airport in 1983, initially commencing operations as an AOC holder conducting ad hoc passenger and freight charters. Since then, it acquired Cambridge Helicopters, Aeromega and Directflight in 2003, before winning the Global Atmospheric contract on behalf of BAE Systems. The purpose of the latter is to explore the Meteorology, Chemistry and Physics of the atmosphere throughout the world. It is commissioned by worldwide universities and governments and utilises a highly modified BAe 146-301, G-LUXE (c/n E3001), and owned by the National Environmental Research Council.

In 2006, Airtask was awarded the Shetland Inter Island Air Service PSO Contract, which it still operates today with a pair of Britten-Norman BN-2B-20 aircraft, G-SICA (c/n 2304) and G-SICB (c/n 2260). These aircraft are based at Tingwall Airport and serve inter-island routes to Foula, Fair Isle, Out Skerries and Papa Stour from Tingwall. In 2010, a dedicated surveillance base was established at Inverness Airport to support a contract that Airtask was awarded by the Scottish Government. This was for a maritime surveillance, fisheries protection and enforcement operation that is served by a pair of Reims-Cessna F406 Caravan IIs: G-SMMA (c/n F406-0094) and G-SMMB (c/n F406-0095). In 2012, another contract was won, this time from QinetiQ for range clearance duties. Two more F406s, G-MAFA (c/n F406-0036) and G-MAFB (c/n F406-0080) support the Ministry of Defence with missile firing range clearance duties from Benbecula Island in the Hebrides. Airtask guarantee a certain number of hours per year to ensure these extremely costly operations are not jeopardised by a lack of air cover.

In 2016, as well as taking control of HAS, Airtask was awarded a contract from the Foreign and Commonwealth Office (FCO) to deploy one of their F406s to Diego Garcia in the Pacific Ocean to trial a new fishery protection process there, which was subsequently deemed successful. As previously mentioned, in 2024 Airtask, through its subsidiary, HAS, was awarded a contract by the Comhairle nan Eilean Siar to operate the vital air service between Benbecula and Stornoway until 2028.

ABOVE: ***Coll's small terminal building and the terminal at Colonsay were part-funded by the European Union*** MATTHEW STEVENS

These days, the schedule is split between summer (late March to late October) and winter (late October to late March). When running the triangular routes, the aircraft spends no more than 15 minutes on the ground, requiring a quick turnaround. Upon landing, the aircraft is shut down and any passengers alighting at that destination are disembarked with the help of the pilot and shepherded to the small terminal building, with any passengers boarding again assisted by the pilot. Those passengers on the scenic flights stay onboard.

In the summer, between the scheduled services, scenic flights are offered as well as irregular charter operations. The 30-minute-long scenic flights cover Dunstaffnage Castle, Oban, Bridge over the Atlantic, Loch Spelve, Torosay Castle, Duart Castle, Lismore Lighthouse, Lismore Island, Castle Stalker and Eriska. They depart at 1100hrs on Wednesdays and Thursdays and at 1400hrs on Fridays and Sundays. Another interesting part of the schedule from Oban is the school flights. Due to the low population of Coll (roughly 170 people) and Colonsay (roughly 125 people), there is no secondary education on those islands and children from both attend school in Oban, staying in hostels through the week.

In the summer, the children fly on Friday afternoons from Oban to

LEFT: ***The picturesque Glenforsa Airfield and hotel on the Isle of Mull*** MATTHEW STEVENS

LEFT: ***Flying over Oban Bay, with the beautiful seaside town of Oban, known as the 'Gateway to the Hebrides' in the distance*** MATTHEW STEVENS

Coll then return to the mainland on Sunday afternoon. In winter, both Coll and Colonsay are served for this purpose but due to the diminished daylight and airfield restrictions, the outbound flight to the islands is undertaken Saturday morning and the return slightly earlier than the summer on Sundays, meaning a very short 'weekend' at home. The public can book tickets on these flights up to two weeks in advance, once the loadings have been finalised.

ABOVE: ***The Britten-Norman BN-2B-26 Islander aircraft is powered by two Lycoming O-540 piston engines*** BEN STANLEY HALL

BELOW: ***G-HEBS looking resplendent in its eye-catching yellow and blue livery*** MATTHEW STEVENS

On April 11, 2024, HAS began operating from a second base at Stornoway, on the Isle of Lewis. The route, from Stornoway to Benbecula, is operated twice a day on Mondays, Tuesdays and Fridays. Like its operations at Oban, it is a PSO air route (the initial contract for which is for four years), although in this instance it is sponsored by Comhairle Nan Eilean Siar (Western Islands Council). The same journey by road takes over four hours and includes a ferry. A large percentage of the passengers on this service are residents of Benbecula, and North and South Uist, attending medical appointments at the Western Isles Hospital in Stornoway.

Previously these flights were operated by Loganair and had been cut from two flights, three days a week to two days a week in June 2023, due to a budget shortfall. The three-day operations were reinstated when HAS took over the service. AW

KEEPING MANCHESTER MOVING

Martyn Cartledge visited the UK's third largest airport, Manchester, to go behind the scenes with its airfield operations team, uncovering its day-to-day responsibilities

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Looking out of the terminal windows at any airport, you will see hi-vis jacketed personnel attending to aircraft. You are likely to see members of the facility's operations team, a department generally known as 'ops'.

Utilising brightly coloured vehicles moving around the ramp, taxiways and runways, these people are the backbone of the airport they serve. Almost invisible to the travelling public in the terminal area, they ensure the airfield is fit for use.

The buck stops here

The airport operations duty manager (AODM) heads up the airfield operations team. An airfield cannot be certified unless it has an AODM; without that certification, there can be no flights. The AODM will have to attend any incident or significant work on the airfield and hold a meeting with air traffic control (ATC), the airport fire and rescue services (AFRS), security and any major contractors on site at the beginning of the shift. Major incidents are thankfully rare, but AODMs can be called to pretty much anything and regularly liaise with different departments.

Working with the AODM at Manchester is one of five teams of five airfield safety and compliance officers (ASCO) working in 12-hour shifts: 0545-1800hrs and 1745-0600hrs. The 15-minute crossover period allows for a briefing between the two. A lot is packed into this time with discussions over such topics as runway operating mode, surface state, taxiway closures, terminal area weather forecast, stand restrictions, equipment parking and pushback procedures and airfield 'hotspots' – areas of taxiway that may need constant surveillance, aircraft turnaround and airfield audits needing to be conducted, wildlife management information, airfield ops performance information including traffic numbers for the shift, callsigns and more.

A night shift has all the same responsibilities but with fewer staff unless there is any work in progress (WIP), whereby extra staff may be required to maintain the overseeing of good safety. Not, of course, limited to night operations and particularly relevant to Manchester currently

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Virgin
DOHERTY

BELOW: ***The airfield operations team forms the backbone of the airports they serve*** ALL IMAGES MARTYN CARTLEDGE

due to the continuing work with the Manchester Airport Transformation Programme (MAN-TP) banner, specifically the construction of the new centre pier. The impact on ops has been minimised as the works have been designed to be landside and, therefore, not in their remit. However, other WIPs, such as the taxiway reconfiguration to produce a two-way system past pier one, are very much part of their remit.

Set roles

The roles undertaken by staff, in addition to general monitoring of safety standards to keep the airfield a safe place for all concerned, are:

The Scarecrow – Conducts wildlife scaring duties, including 'bird runs' on runways.

Leader 1 – Covers primarily around Terminal 1 and Terminal 3, namely marshalling jobs, vehicle accidents and any other incidents.

Leader 2 – Same as above, primarily around Terminal 2 and West Apron.

Leader 8 – Audits of road systems, walkways, paved and grassed areas and aircraft turnaround audits.

Airliner World took a shift with the final member – a ranger.

This role has a much broader remit as although it mostly covers taxiways and runways, it will also help others out if required. 'Ranger' is also a general term, as the callsign used with ATC will be 'ranger' plus the number of the vehicle. All vehicles now have multilateration surveillance (MLat) to allow tracking by ATC. 'Leader' and 'Scarecrow' callsigns are only used within the ops team.

Airfield regulations

To list all of the possible contraventions of regulations is impossible. A large section is driving issues such as permit irregularity, unsafe/illegal parking, speeding, accidents, or – possibly the most important in this category – encroaching on a taxiway or a runway incursion.

Other reasons to fill out an Airfield Occurrence Report, a form that must be completed for any event that contravenes regulations, could be personnel events such as unsafe working practices, personal injury or smoking on the apron, to aircraft-related incidents such as a non-compliant pushback, parking errors or the obstruction of a taxiing aircraft.

ABOVE: ***The airfield ops team holds a meeting with the various airport departments at the beginning of each 12-hour shift***

Any contravention can have a very real effect on the person at fault, often coming with a fine of up to £100 or the removal of a driving permit. In certain circumstances, the offence can be so serious that the offender's airside permit is revoked, which, in all probability, means the loss of that person's job.

Adam Barker, covering the ranger role during our visit, said: "Theoretically, events when endangering an aircraft can be so serious that it would result in jail time and an unlimited fine. We like to work on a just culture basis, as mistakes sometimes happen. It's how we best learn from that."

Everybody's responsibility

Safety is a collaborative process and works best when everybody buys into the concept. One job demonstrating this statement is the removal of foreign object debris (FOD) which can cause damage to aircraft and is very much in the remit of every ops team member or anyone working on the ramp. Appropriately, it was where we started our day, with Barker as 'ranger six'.

BELOW LEFT: ***Utilising brightly coloured vehicles moving around the ramp, taxiways and runways, these people are vital to the running of the airport***

BELOW: ***'Follow me' vehicles are used when an aircraft needs guiding from the taxiway to its allocated stand rather than making its own way***

ABOVE: ***The SunExpress 737-800 safely parked on stand 27***

23
ICELANDAIR
STOP
SAFEDOCK

RIGHT: ***Before the introduction of Advanced Visual Docking Guidance Systems (AVDGS), much of the ops team's time was taken up with marshalling aircraft onto their stands***

FOD is anything that should not be on the airfield, from a piece of paper to parts of an aircraft. Just a few hundred metres from the operations centre, we saw a lot of paper items blowing around what is known as the West Apron. Given the amount, I got out to help, placing them in the FOD bin of the ops vehicle.

Almost immediately after we finished, a radio call came in for a 'follow me' job. This is where an aircraft, in this case, a SunExpress Boeing 737-800 inbound from Antalya, needs guiding from the taxiway to its allocated stand rather than making its own way via directions from ATC ground control. There are various reasons why an aircraft might be required the use the services of a 'follow me'. In this case the parking spot it was headed for, stand 27, requires all aircraft to use the services of a follow-me vehicle because of the difficult turn onto it. Initially, ATC would have instructed the crew to follow the follow-me vehicle. Before guiding, Barker checked for FOD and any potential obstructions on the stand. He then collected the aircraft by heading towards it before turning to show the rearward-facing sign saying 'Follow Me' and then driving the route required onto the stand.

BELOW: ***Some stands do still require a marshaller at Manchester, such as 44R, due to a very tight turn over the airfield road system***

Loganair
AIRFIELD OPERATIONS

Turnaround audits are carried out regularly to monitor and check all processes

LSG Sky Chefs
LSG Sky Chefs
382
SKY 815
AIRBUS A380-800
TUG
12 C

Marshall on

One job that is nowhere near as prolific as it used to be is marshalling. Barker explained: "A dozen years or so ago when I started, every single stand on the airfield was 'marshall on', meaning that a lot of our time was taken up simply marshalling aircraft onto stands. We now have Advanced Visual Docking Guidance Systems (AVDGS) that automatically guide the aircraft to the correct stop mark. This means that ASCOs can now spend more time focusing on the safety aspects of the role. We still have some stands that require marshalling, but nowhere near as many as 12 years ago."

Barker's next job was to come from one of these stands. An ATR 72 of Loganair was due on stand 44R, which requires a marshaller because the aircraft needs to make a very tight turn over the road system.

Next, it was time for proactive work: a turnaround audit. This is one of the many audits that are categorised at three levels and done at prescribed intervals. In this audit, all the different agents required to visit an aircraft during a turnaround, such as catering supplies, refuelling, cleaning, etc, were monitored and processes checked.

Examples could be vehicle parking positions, using correct working practices, or even something seemingly as simple as wearing the proper clothing in the prescribed manner. Most often, this equates to having a high-visibility jacket on and, importantly, fastened up. This latter point may not seem important, but serious accidents have been reported stemming from this apparently trivial matter.

Ops control then overheard a radio call asking Scarecrow to head to taxiway Alpa as bird activity had been noted. Barker called to ask if he could cover this so I could see the process in action. Some bird types respond better to one kind of tactic than others. The crow family is a particularly intelligent group of birds and often needs multiple tactics to move them on or at least sufficiently far away from sensitive areas. The birds in question are magpies – Barker selected that bird's distress call and broadcast it over the vehicle's loudspeaker, succeeding in the perfect outcome, the birds departing well over the airfield perimeter fence.

Barker decided we would do a runway inspection while on taxiway Alpha. However, before we could reach the holding point of 05L, we spotted another bird, this time a buzzard, who had other ideas about moving on, requiring the use of the cap gun. A cap gun is one step down from the Very pistol as it does not require the user to have a firearms licence, whereas the latter does. The Very pistol fires a shell into the air, which detonates with a loud bang. Despite the cap gun being quieter than the pistol, it is still a considerable noise, which did the trick for the belligerent buzzard.

Next, we finally did what we came for. Barker called ATC for permission to enter 05L to do a runway inspection. Runways, by law, must be inspected twice in every 24 hours. However, at Manchester, this is done much more regularly. Additionally, ATC may request an inspection, and there will always be one after any form of emergency landing. Runway inspections are run in the direction of traffic as opposed to bird-scaring runs, which are against the flow. The inspection is for FOD, bird debris

BELOW: ***Buzz off belligerent buzzard… scared away by the noisy cap gun***

ABOVE: ***Runways, by law, must be inspected twice in every 24-hour period. At Manchester, this is done much more regularly***

suggesting an aircraft strike or runway defects of any sort. When we got to the 23R end, the runway markings were partially obscured.

Barker explained: "With 23R being the primary landing runway for a variety of reasons, rubber quickly builds up on the landing area, and this requires three to four days of cleaning each month to ensure the markings are visible and the runway grip levels are in tolerance."

Airfield audits

It didn't take long to find the next issue, and we were back to the beginning with our old friend, FOD. Six black bags had been left on a stand. The bags on their own were a FOD issue, but if one or more were to open, the contents could quickly spread across the apron. The bags were assumed to be waste from a previous turnaround, and this is where Barker needed to turn detective to uncover which flight this was from so that the culprits could be found. Donning gloves, he quickly looked inside and evidence was readily available. Aircraft waste requires removal by the cleaning companies due to potential high-risk items inside, so arrangements were made to have it moved asap. Should any items make it unsafe for an aircraft to park there, it could cause problems if a suitable replacement stand cannot be found. The aircraft would need to wait for the blockage to be moved, potentially causing a delay for the next aircraft to use the stand in question.

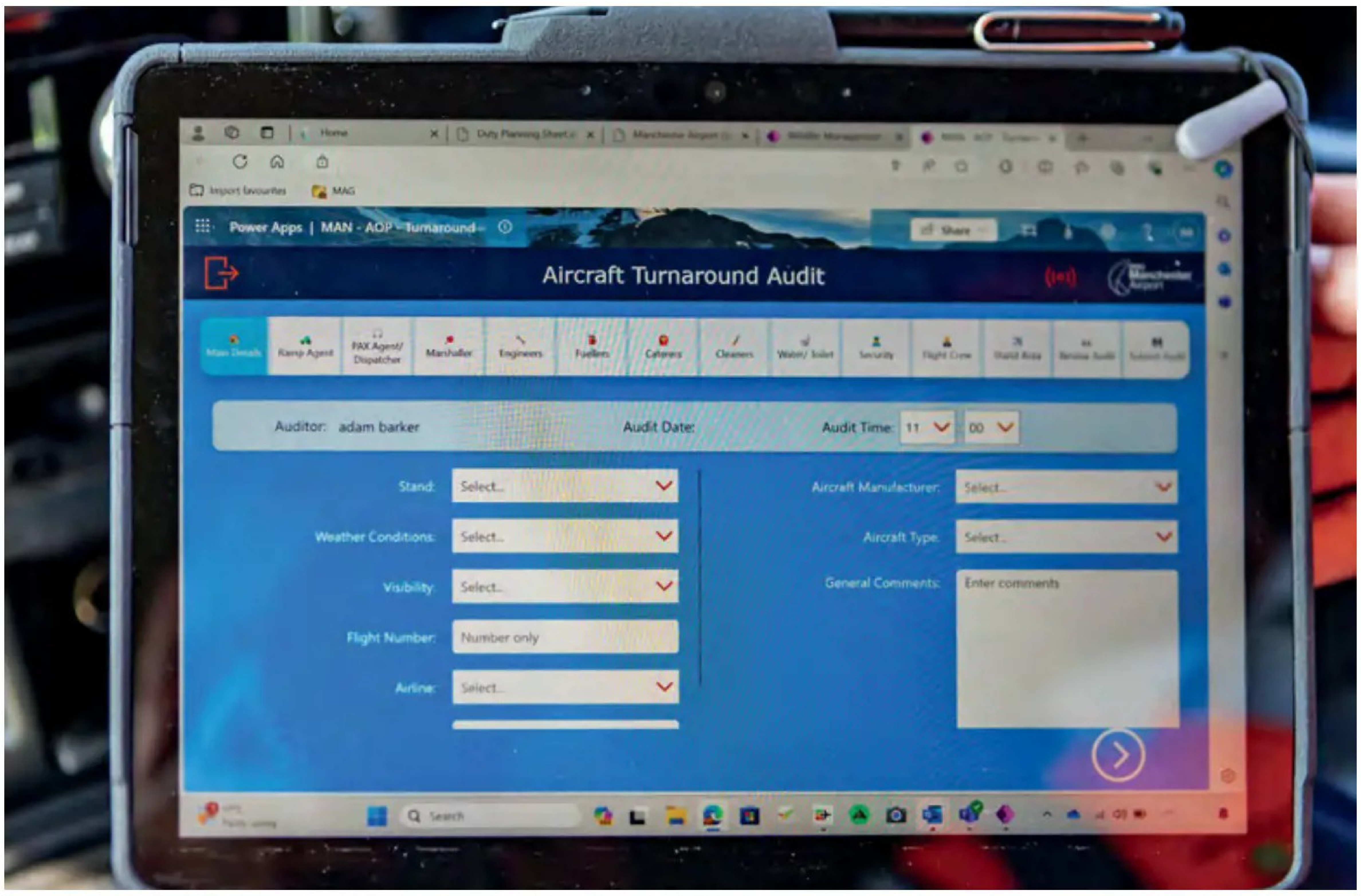
Taxiways are often used to park aircraft, generally on a temporary basis. Taxiway Quebec is one of these, having had aircraft moved there to free up stands in the early mornings. Now, it needed to be used as a taxiway again, and Barker needed to do a general safety and FOD check before he could hand it back to ATC.

Time for some more proactive work, this time on the fabric of the airfield itself. In addition to the regular audits, there are 'hotspots' listed at the start of each shift briefing, detailing areas that may still need repair or need checking more often than normal. Our destination was again taxiway Alpha adjacent to the Runway Visitor Park and aether, the private terminal. The check showed no urgent work was required, and ATC could continue using it. A viscous liquid known as 'hot pour' can be used to make running repairs should the need arise.

Each specific audit has a reference number to enable it to be tracked, and the outcome of any audit must be entered into the app provided on the iPad. There is a separate app for logging where wildlife is seen around the airfield so this was now used to log the buzzard and magpies. The dispersal method was also logged in addition to the direction the birds took. This data can be used to create plans to help the dispersal of birds. "Gulls love messing about on runway thresholds," Barker said.

Within the 15-minute crossover time at the end of the shift, ASCOs have an opportunity to pass on any relevant information to their incoming colleagues. No day for an ASCO is ever really the same, and the distance covered is often quite considerable. So the next time you look out of the window while waiting for your flight, try to find an ops person among all those hi-vis jackets. **AW**

BELOW: ***The airfield ops dashboard on the iPad. The outcome of any audit must be entered into the app provided***



Auditor: adam barker
Audit Date:
Audit Time: 11 : 00
Stand: Select...
Weather Conditions: Select...
Visibility: Select...
Flight Number: Number only
Airline: Select...
Aircraft Manufacturer: Select...
Aircraft Type: Select...
General Comments: Enter comments

TURKISH

SANLIURFA
TURKISH AIRLINES

ABOVE: ***Airbus A330-343, TC-JNK (c/n 1172) departing from New York/JFK*** VINCENZO PACE

Turkish Airlines is known for stretching its tentacles to many destinations and holds a *Guinness World Record* for 'most countries flown to by an airline' with 132. It operates 53 domestic and 269 international services, including six to the British Isles, London/Heathrow, London/Gatwick, Dublin, Edinburgh, Manchester, and Birmingham. It carried 83.4 million passengers on its 375 aircraft during 2024 and employed more than 33,000 staff. It has become one of the world's top ten airlines defined under various criteria including revenue, passengers carried, seat capacity, and countries served. Growth was accelerated by the October 2018 opening of a home hub at the brand new Istanbul Airport. To keep an airline of this magnitude ticking over takes a considerable effort and planning as *Airliner World* discovered.

Crew training

Located on the western fringe of Istanbul/Atatürk, the Turkish Airlines Aviation Academy is where 15,000 cabin crew receive two months of initial training, with two-day refreshers scheduled every nine months thereafter. The facility contains cabin mock-ups of every aircraft in the fleet and tuition is tailored to specific aircraft type. The Boeing 787 mock-up incorporates the entire forward section of the aircraft, including cockpit, forward galley and cabin control system. A steel cabin used for live fire training can be modified to simulate fire in overheating laptops, galley ovens, overhead bins, seat backs and so on. Water-based evacuation takes place in a 19x12m pool and everyone gets wet – as they should.

Flight training

Across the other side of the main road, the Turkish Airlines Flight Training Center is home to 27 full flight simulators. The complex opened in 2019, and never closes, with each simulator used four or five times daily, and each session lasting four hours. The airline employs around 6,000 flight crew and simulator time is prioritised for its pilots, with remaining slots rented to other airlines. Sessions incorporate a one-hour briefing, four hours simulator time and then one hour of debriefing. Active simulator time includes take-offs and landings, plus additional scenarios like engine failure, bird strike, and wind shear escape. Category C airports like Salzburg require simulator training before flight crew are assigned to fly the route for real.

DELIGHTS

Robert Veitch travels to Istanbul for a behind the scenes tour of some of the facilities belonging to the airline that wants to 'widen your world'

TC-JNK
AIRBUS A330
TC-JNK

Pilots are required to undertake annual simulator training, but at Turkish it is mandated at six monthly intervals.

With little experience beyond flying the family nest, the opportunity to have a go was just too good to pass up. The 787-9 Dreamliner simulator was set up to depart from runway 35R at Istanbul, 'flying' a short rotation around the block before landing on runway 36. It proved a daunting experience in front of a small audience that seemed surprised when I finally got airborne and clapped after my bumpy landing. The sidestick controls on the A320 simulator proved more troublesome to adapt to, with a tail strike on departure followed by a very heavy, some might say, crash landing. It seemed fairly obvious that my nine-year-old nephew could do this better than I could – hats off to the people who do this for real.

Turkish Technic

Turkish Technic at Istanbul/Sabiha Gökçen is on the Asian side of the city, 20 miles southeast of the Bosphorus. The facility, a 100% owned subsidiary of the airline, opened in 2015 and is its primary MRO base. It has a midfield location between the parallel runways 06L/24R and 06R/24L. Its two hangars and paint shop cover an enclosed area of 4,090,285sq ft and can simultaneously house up to 11 narrowbody and three widebody aircraft. The complex employs 3,100 staff, operating 24 hours a day, with a capacity to work on up to 24 aircraft at any one time. Most parts of the facility are quiet, and an air of concentrated calm pervades its many spaces as the army of skilled staff go about their work. Approximately 70% of the MRO is for Turkish Airlines, with remaining capacity made available to other airlines.

MRO facilities are places few passengers see, yet all are reliant on their work, it being a critical component in aircraft safety. Inside the cavernous paint shop, a bare metal Airbus A330 naked as the day it was 'born' in Toulouse, awaited its new livery. In the adjacent widebody hangar the tail docks reached high into the void above, but still short of the 80ft ceiling. Hangar height exceeds aircraft height by 15ft so aircraft can be raised for landing gear removal – Airbus A330-303, TC-JOE (c/n 1571) was one such example. Next door in the narrowbody hangar, nine aircraft were undergoing maintenance, comprising an Airblue A321, a Go First A320, a Southwind Airlines A321, a Transavia Boeing 737, an AJet A321, two AJet 737s, and three Turkish Airlines A321s.

Away from the main hangars, some aspects of MRO, like avionics, »

TURKISH CARGO
TC-LJR

ABOVE: ***Boeing 777F, TC-LJR (c/n 66578) above the skies of New York***
VINCENZO PACE

> “Inside the cavernous paint shop, a bare metal Airbus A330, naked as the day it was ‘born’ in Toulouse, awaited its new livery”

take place in ‘clean environments’. Dust capture mats at the entrance minimise contamination and ensure diagnostic work and computer-based maintenance can be reliably carried out. The workshop also works on avionics from aircraft not in for scheduled maintenance. Functioning parts can be loaned to airlines while their equipment is being fixed, and the airline pays for flight hours on the loaned part plus the repair. The workshop said it can fix 98% of the faults it diagnoses, while the rest are sent to the original equipment manufacturer (OEM) to be resolved.

In the landing gear workshop, the sight of a trunk section up close and separated from its mothership makes one realise how big they are, and the load they must bear. Full strip downs occur every ten years or after 20,000 cycles – whichever comes first. Turkish Technic maintain landing gear for the A320, A330, 737, 777 and will add the 787 once certification is achieved. Triple-seven landing gear is the largest the workshop deals with, and the main gear from 777-3F2ER, TC-JJZ (c/n 44122), was being stripped in readiness for fatigue testing – each main gear trunk is a steel alloy weighing 1,509kg. Across the workshop, landing gear from TC-JOE awaited its turn for maintenance. Just 35% of the workshop capacity is taken by Turkish Airlines, with the remainder used by subsidiary and third-party airlines. A little oddity that fosters ‘a good atmosphere’ among workers permits supporters of the current Turkish Süper Lig football league champions get to hang their flag in the workshop – in this case Galatasaray. After stepping back outside, the sound of aircraft departing Sabiha Gökçen proved a timely reminder that hardware maintenance is an essential aspect of aviation safety.

TURKISH AIRLINES
A321 2R

LEFT: ***The 787 mock-up incorporates the entire forward section of the aircraft and escape slide***
KEY-ROBERT VEITCH

TURKISH FLIGHT TR

RIGHT: ***Arriving at the Turkish Airlines Flight Training Center at Istanbul/Atatürk***
KEY-ROBERT VEITCH

ABOVE: ***Inside the A320 full flight simulator after 'landing' on runway 36 at Istanbul*** KEY-ROBERT VEITCH

SmartIST

Istanbul Airport is vast, on an epic scale that the premier legacy airports of Europe can only dream of. At 19,000 acres, it covers more than six times the ground surface area of Heathrow. Located 20 miles north of the facility it replaced, Istanbul/Atatürk, it is currently the second busiest in Europe behind Heathrow – though expansion plans will soon leave its London counterpart trailing in its wake. Towards the western side of the facility and located between the four-runway complex is Turkish Cargo's SmartIST, which receives, handles, and delivers the airline's freight.

The 1,640ft-long, 2,206,602sq ft bespoke facility opened in 2022, and will expand to 3,659,730sq ft and almost two-thirds of a mile in length when phase two opens in 2027. The world's busiest cargo hub, Hong Kong, processed 4.9 million tonnes in 2024, while Istanbul processed 2.2 million with the aim of reaching 4 million tonnes annually once expansion is complete. Around 70% of cargo processed is in transit, and with 50 countries within a four-hour flight radius, the airline believes Istanbul occupies a global cargo crossroads. It's one thing to attach a delivery label to a parcel and another to be the recipient, but in between, cargo transportation logistics is something that just 'happens' – moving things around the world in a never-ending process.

The cargo operation works in three continuous daily shifts, employing 3,000 staff. Integral to its functionality is the automated storage and retrieval system (ASRS), an autonomous pallet and container handling system (PCHS) known as the material handling system (MHS). At 69ft high and split into three sections, it contains 17,000 pallet locations, each offering one tonne of storage capacity. Cargo arriving by road at one of the 90 landside docks is checked-in, before entering the MHS. Transit pallets offloaded from aircraft containing freight bound for several destinations are broken down with each element transferred to another pallet bound for journeys end, then fed into the MHS. Larger items are stored in

»

Turkish Airlines fleet

Aircraft	**Number**
Airbus A319	6
Airbus A320	18
Airbus A321	121
Airbus A330	59
Airbus A350	24
Boeing 737	80
Boeing 777	44
Boeing 787	23
Total	**375**

RAINING CENTER
EDAT
EKERCİ
AMPÜSÜ

BELOW: ***A bare metal Airbus A330, naked as the day it was 'born' in Toulouse, awaiting its new livery*** TURKISH AIRLINES

CTI SYSTEMS

STAR ALLIANCE
ÜRGÜP
TURKISH AIRLINES

ABOVE: ***Airbus A321-200, TC-JRP (c/n 4698), undergoing engine maintenance***
TURKISH AIRLINES

CTI SYSTEMS
ANADOLUJET
A TRADEMARK OF
TURKISH AIRLINES

LEFT: ***AJet Boeing 737 MAX 8, TC-LAI (c/n 64947) in the narrowbody hangar at Turkish Technic***
TURKISH AIRLINES

> "Turkish Cargo operates a fleet of eight Boeing 777Fs and ten Airbus A330-200Fs, with four 777Fs and five A350Fs on order"

a separate airside PCHS with 2,000 positions, of which 200 are reserved for cold storage.

The ground floor of the building is for cargo flights, with the first floor reserved for passenger flight cargo. Pallet retrieval begins six hours before departure and they are moved to one of 22 airside docks ready for aircraft loading. Customs inspections take place on cargo entering or leaving Türkiye and security screening can include sniffer dogs, X-rays, and manual searches. The control room oversees the MHS, searching continuously for system errors, usually limited to one or two each day, but usually requiring human intervention to fix. In the past there was a dedicated team searching for missing freight.

The ground floor also houses a dangerous goods area, bond, and two temperature-controlled cold storage areas. A smart aspect of SmartIST is the layout which places the coolest rooms at the centre with cool rooms surrounding them. Cold storage includes food, flowers and medicines, and these shipments are dispatched no earlier than 90 minutes prior to flight, ensuring the cool chain is maintained.

Live animal shipments

Turkish Cargo operates a spacious 10,750sq ft dedicated, IATA-regulated, live animal facility close to the main passenger terminal, called TK Live. As most livestock are small enough to travel in the hold on passenger flights, this minimises the distance to and from aircraft. The facility has an on-site vet and welfare is paramount, with animals loaded onto aircraft last of all, and always first off. Each consignment will have welfare, nutrition and medication instructions attached to the crate. Livestock sometimes travel with a dedicated carer, but most travel independently, with TK Live staff looking after feeding, cleaning, exercise and any relevant medication.

Large livestock are transported to aircraft in palleted crates on dollies, while smaller creatures such as cats are transported in their crates, inside a temperature-controlled minibus. Horses, cats, dogs, fish and chicks pass through regularly, and during our visit, five cattle were transiting from Texas to Karachi, reptiles were bound for Frankfurt, two cats were off to Seattle, while a pair of French Bulldogs appreciated *Airliner World's* attention. The TK Live team once transported a crocodile, but the most unusual creature was a whale on its way to Ukraine, which required sole use of an entire aircraft.

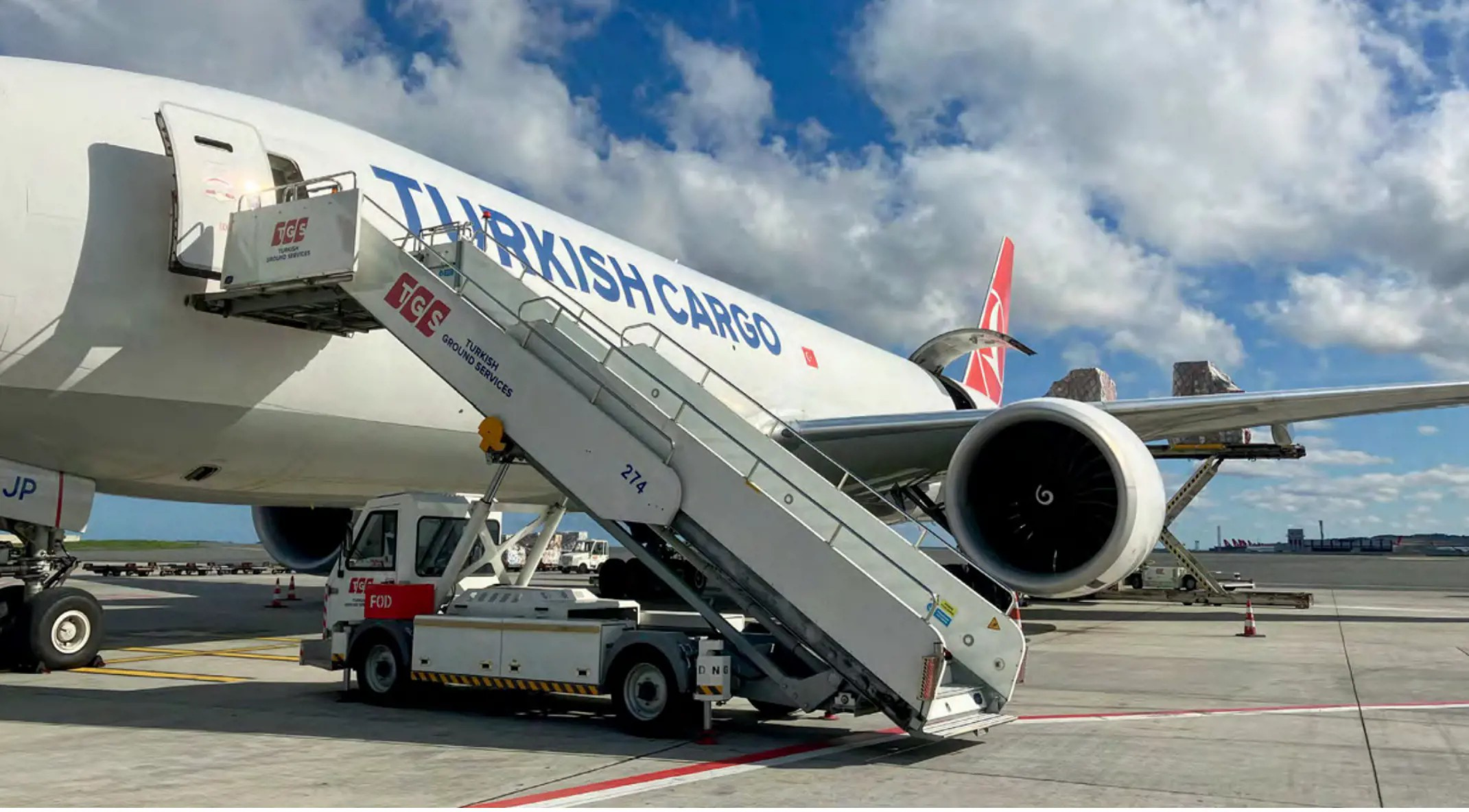
Aboard a freighter

Turkish Cargo operates a fleet of eight Boeing 777Fs and ten Airbus A330-200Fs, with four 777Fs and five A350Fs

TURKISH TECHNIC

LEFT: ***Main landing gear being overhauled***
TURKISH AIRLINES

RIGHT: ***The material handling system at Turkish Cargo's SmartIST has 17,000 storage locations***
KEY-ROBERT VEITCH



on order. It flies around 25 daily cargo flights, to approximately 80 regular cargo destinations, shipping 46% of the airline's freight, with the rest shipped on up to 625 scheduled passenger flights departing Istanbul daily. This abundance gives Turkish Cargo an edge in completing deliveries swiftly.

Out on the ramp, Boeing 777F, TC-LJP (c/n 65744) had arrived less than an hour previously after a 10hr 43min rotation from Guangzhou/Baiyun. Workers scurried around like ants and with half the pallets unloaded, *Airliner World* was allowed to climb the steps to board Juliet Papa. Beyond the four seats and crew rest area behind the cockpit it was possible to edge along the narrow gap between the remaining pallets and the fuselage to enter the main hold and witness unloading first hand. The six-year-old widebody had left China with 38 pallets, totalling 96,900kg, not far short of its maximum load of 102,000kg.

The rear cargo door permits loads up to a height of 3m, and although the pallets are locked in place, a minimum of 6cm vertical clearance to the fuselage ceiling is required to allow for in-flight turbulence. The remaining pallets were being unloaded speedily using motorised directional rollers and stoppers on the cabin floor. Once rolled out through the door, across the bridge and on to the cargo loader, pallets are hydraulically lowered to the ground. Freighters can be turned around in three hours and are operated by two or three flight crew and one loadmaster. Juliet Papa was enjoying a more leisurely turn around, not due to depart for New York/JFK until 2200hrs that evening.

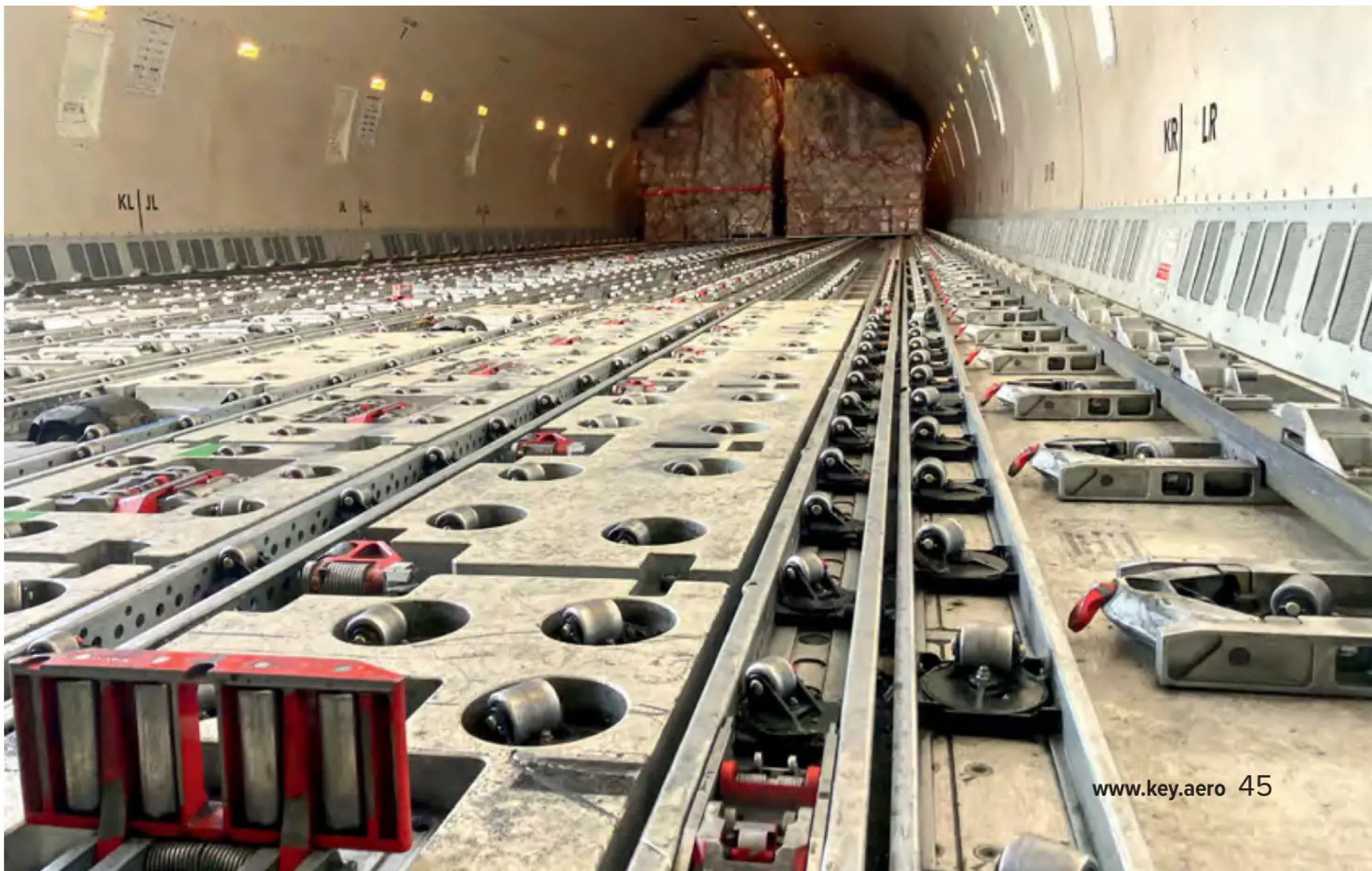
With the grand tour complete it was time to head home, safe in the knowledge that everything was safely under control. **AW**

ABOVE: ***Boeing 777F, TC-LJP (c/n 65744) being unloaded at Istanbul***
KEY-ROBERT VEITCH

LEFT: ***A friendly French Bulldog in transit***
KEY-ROBERT VEITCH

BELOW: ***The main deck of TC-LJP during unloading, with rollers and stoppers in action***
KEY-ROBERT VEITCH

LÖDIGE
2424



Where NEXT?

EMERGENCY
PHONE

ABOVE: ***New routes are often celebrated by airlines with much fanfare. However, much will have gone on behind the scenes before any new addition to an airline's network finally takes to the skies***
BRITISH AIRWAYS

Airliner World's 'How it Works' series delves into the complexities of the commercial industry. Here, airline business expert **Jonathan Hinkles** looks at the art of route network planning and development

The path of millions of customer journeys worldwide is carefully decided by a small group of airline network planners who, if all gathered together, wouldn't fill the Royal Albert Hall. Were any such gathering to happen, it would no doubt attract the attention of competition authorities anyhow: planners are on the front line of the battle in our skies. Their closely guarded secrets, know-how, data and finely honed instincts all flow into decisions regarding where and when airlines deploy their fleets.

To learn more, I talked to Peter Kenworthy, whose career began 40 years ago in the planning department of London/Gatwick-based British Caledonian (BCAL). Kenworthy progressed to senior commercial roles with both leisure and business carriers, including GB Airways and bmi Regional. He now delivers training courses worldwide for IATA, including network planning.

Today, the internet has transformed the art of network planning from times when customers booked almost exclusively through travel agents, as Kenworthy said: "Historically, route evaluations used data from travel agency systems and output from government and Civil Aviation Authority (CAA) surveys."

The CAA survey, where teams of interviewers popped up at UK airports to quiz passengers about the location of their homes and where they were heading, provided a mass of data that airline planners used to assess demand for new routes. If the CAA survey found that 8% of the then-annual million passengers flying from London/Heathrow to Brussels lived in Somerset, Avon and Wiltshire, it was a safe bet that demand sufficed for Bristol to Brussels schedules.

"On new business routes, the inputs of corporate travel agents, large companies and local Chambers of Commerce were frequently sought," recalled Kenworthy. "For leisure routes, holiday company engagement was always crucial, especially if they were willing to buy a block of seats up-front – many routes took to the air based on such 'part charter' arrangements."

Joining the dots

Flight connections were another source of inspiration for new routes. In legacy airlines, some routes existed to connect to long-haul flights, although the relentless pursuit of increased profits means that many loss-making short-haul routes flown to feed

EMERGENCY
PHONES
ND 2

BRITISH CALEDONIAN
DELTA

ABOVE: ***Peter Kenworthy's career began 40 years ago in the planning department of London/Gatwick-based British Caledonian*** GATWICK AIRPORT

long-haul services have been axed. "Connections outside airline alliances are a fraction of what they used to be," explained Kenworthy. "Regional airports have seen connections to hubs reduce or disappear completely. Leeds Bradford, Teesside, Plymouth and Liverpool have lost air connectivity to London; even Manchester has lost connectivity to Gatwick, and frequency to Heathrow is a shadow of its former self."

Data combined with instinct often inspired airline planners. In 1997, I spent a year with Qatar Airways running its network when the airline had just five aircraft – two 496-seat Boeing 747-100SRs built for domestic flights in Japan and three Boeing 727s.

Connections from Colombo via Doha to Beirut and Amman were essential. Kuwait had to be connected to Colombo and Thiruvananthapuram; otherwise, short hops to Kuwait would have barely a handful of passengers aboard. Other links were less visible. The elderly 747 flew Gatwick-Cairo-Doha. Several hours after it landed, a 727 would meander from Doha via Sharjah and Kolkata to Kathmandu.

Manually compiled data showed a few dozen rugged passengers taking this route from London to the Nepalese capital each month despite a journey so arduous as to deter even a hardened aviation buff. Although the numbers were modest, it instinctively felt like this could grow if only we could provide better service.

We began to schedule London flights, with the 747 barely able to make it non-stop from Gatwick, in tandem with a 727 leaving Doha for Kathmandu just an hour later. Straight away, passenger numbers skyrocketed. Qatar Airways developed an unassailable lead to Nepal thanks to connections that no one else offered, and it retains that position today by being in the right place to connect those markets. A plan to fly to Munich, when no other Gulf airline served Germany's second-largest market, was also a success. Qatar Airways now has more than 250 aircraft.

Kenworthy said: "Geographical location remains a significant driver of connecting traffic. Beyond successes of the Middle East and Asian airports and airlines, let's not forget Royal Air Maroc at Casablanca bridging Europe to west and central Africa, the successful Ethiopian Airlines hub at Addis Ababa and Turkish Airlines' mega-hub at Istanbul."

It doesn't always go to plan. I lost count of the route proposals I've written, but I still remember every one that didn't work. The enduring lesson is that you don't know what you don't know, and experience is sometimes the only way to find out. Delta's Glen Hauenstein, president of one of the world's largest airlines and a network planner at heart, once remarked of route developments that "as long as we were right more often than we were wrong, we were ahead". That mantra is one I've occasionally quoted at an airline boardroom table.

Today, a handful of large airlines have become much larger as the industry has consolidated through mergers, acquisitions and bankruptcies. Shareholder pressure drives different behaviours when it comes to network management,

»

BELOW: ***Today, the internet has transformed the art of network planning from times when customers booked almost exclusively through high street travel agents*** LUFTHANSA SYSTEMS

easyJet
easyJet
New routes from Southampton
FLY TO
BELFAST
AND GLASGOW
BOOK NOW
SO Southampton Airport

RIGHT: *For low-cost carriers, commercial deals struck with airports and support from tourism agencies and local governments are key* EASYJET

too. "New routes are given less time to prove themselves these days," Kenworthy explained. "Low-cost carrier destinations can disappear almost as quickly as they appear. If a route or a specific day of week frequency doesn't achieve its projected profitability, it's quickly dropped and replaced with another."

Low-cost connections

For low-cost carriers like Ryanair, commercial deals struck with airports and support from tourism agencies and local governments are key. Even so, elements of Ryanair's planning remain largely invisible, yet are key to its perpetual profitability.

Studying its network unveils a few tricks of the trade largely overlooked in the tale of its ascent to become Europe's largest airline. At East Midlands, Ryanair serves two destinations in France: Limoges and Bergerac; 36 miles away, it flies from Birmingham to three very different airports in France: Toulouse, Perpignan and Paris/Beauvais.

Unless serving a big destination like Dublin or Palma, it's rare to find overlapping routes from adjacent airports in Ryanair's network. At Manchester, Ryanair serves the Latvian capital, Riga; 35 miles away at Liverpool/John Lennon Airport, its only service to the Baltic States is Kaunas in Lithuania.

It eschews "over-fishing" of catchment areas, creating a single, strong route rather than two weaker ones. So when it comes to serving Slovakia, Manchester is connected to Bratislava, but flights run only from Liverpool to Kosice, 250 miles away in the same country.

Although Ryanair competes intensely with other airlines, this careful curation by its network team limits competition with the most formidable contender of all, itself. It's little wonder that it is consistently more profitable than rivals who haven't cottoned on to this canny principle hiding in plain sight on Ryanair's route map.

Seasonality is also a major factor in airlines' decisions. Double the number of passengers fly from UK airports in July than in the quietest month, January. This means there are big profits to be made in the busy summer months, but there is potential for big losses during the winter. It's not a new phenomenon. "The late Joe Gaggero, chairman and owner of GB Airways, used to say to me 'get me through the winter, Peter' each October," said Kenworthy.

Navigating the tricky winter calls for increasing creativity by airline planners. With routes to North Africa, the Canaries and traditional European ski resorts all at saturation, a new frontier has opened for making a virtue of cold weather by flying to airports such as Akureyri in Iceland, now served by easyJet between November and April.

This year, we've seen three airlines – British Airways, easyJet and Wizz Air – all launch services to Tromso above the Arctic Circle for those chasing the Northern Lights. There's little doubt that Avinor, Norway's airport agency, presented the opportunity at a route development conference. Regular fixtures in the airline calendar, airports are given a 15-minute "speed dating" session to pitch the next figurative pot of gold at the end of a rainbow.

Technology transformation

Travel agent data and CAA surveys are a smaller part of network development today. In a world where more than two-thirds of air tickets are booked online, the internet has itself become a prime source of insight into customers' travel plans. Data from Google Flights and Skyscanner identifies the routes for which prospective customers are searching.

The frequency of web searches signposts latent demand for air routes to the airlines. Over 250,000 searches were made last year for flights between Manchester and Southampton, which was served by Flybe before its collapse. The search data shows that demand for air services is still very much alive.

Believe it or not, your mobile phone also yields a trove of data for airline planners. Although it can't identify you individually, your mobile provider knows if you live near Glasgow, are seen at Edinburgh Airport, and next pop up on a 4G network in Copenhagen. If you make that trip a few times a year, the de-personalised data sold by your mobile network may yet build the case for Glasgow to Copenhagen flights.

It's just another sign of how technology continues to transform the science of network development. It's a long way from my route to Kathmandu and BCAL's planning department of 1985, in which Kenworthy began his career. **AW**

Flight Departures

Time	Destination	Flight	Gate	Remarks
07:10	PALMA DE MALLORCA	EZY3359	09	Gate Closed
08:00	TENERIFE-SOUTH	LS3283	01	Go To Gate
08:15	ISLE OF MAN	LM682		Gate Information 07:45
08:25	ALICANTE	FR57		Gate Information 07:40
08:25	IRELAND WEST KNOCK	FR6552		Gate Information 07:40
09:05	PARIS - CDG	EZY3475		Eat, Shop & Relax
09:30	BUCHAREST	W43012		Eat, Shop & Relax
09:35	HURGHADA	EZY3483		Eat, Shop & Relax
10:00	LANZAROTE	LS3201		Eat, Shop & Relax
11:50	DUBLIN	FR443		Eat, Shop & Relax
12:05	AMSTERDAM	EZY3445		Eat, Shop & Relax
12:35	MALAGA	FR9862		Eat, Shop & Relax
13:10	DUBLIN	EI3193		Eat, Shop & Relax
13:25	TENERIFE-SOUTH	EZY3365		Eat, Shop & Relax
13:30	TENERIFE-SOUTH	FR4346		Eat, Shop & Relax
13:45	BELFAST INT.	EZY507		Eat, Shop & Relax
14:25	ISLE OF MAN	EZY517		Eat, Shop & Relax
15:10	DUBLIN	FR449		Eat, Shop & Relax
15:20	KRAKOW	FR6360		Eat, Shop & Relax
15:55	DUBLIN	EI3197		Eat, Shop & Relax
16:05	BELFAST CITY	EZY533		Eat, Shop & Relax
16:35	MALAGA	FR9896		Eat, Shop & Relax
16:45	ALICANTE	EZY3357		Eat, Shop & Relax
17:00	BELFAST INT.	EZY505		Eat, Shop & Relax

07:15

RIGHT: ***Airports are given the opportunity to present themselves to airlines at regular route development conferences in a bid to fill their departure boards with new destinations*** KEY-LEE CROSS

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Great Airports of the World travels the globe to investigate which airports can be deemed great and why they receive such an accolade. The selection of airports is diverse, from the challenging Lukla airport in Nepal to Singapore's Changi, which has long been known for fantastic terminal facilities.

While airport security protocols can often be at odds with the enthusiast wanting to follow their interests, we highlight some exceptions, such as the UK's third largest airport, Manchester and Germany's busiest, Frankfurt.

Airports don't become great without planning, and this publication looks at organisations that makes an airport stand out.

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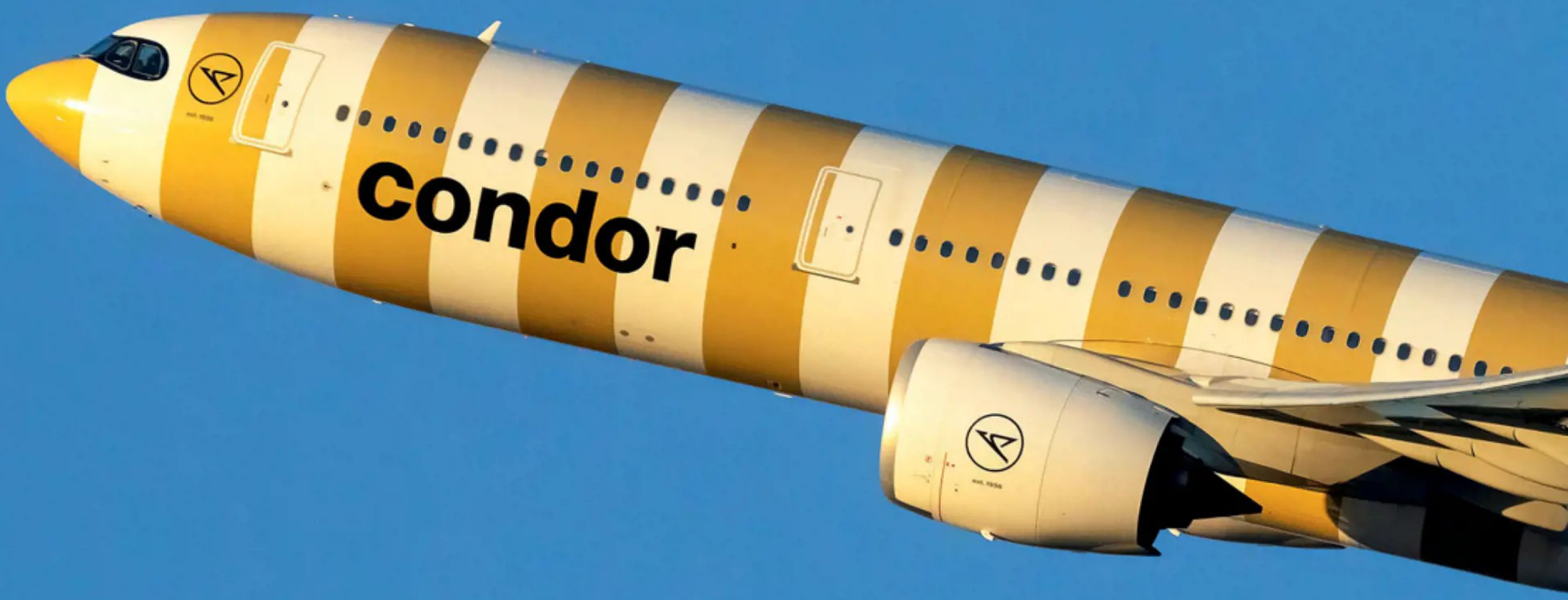
APRIL 2025

Condor Airbus A330-941, D-ANRH (c/n 2024), glistens in the Big Apple sunshine as it banks out of New York/JFK. The widebody is emblazoned with the Beach variant of the German leisure carrier's controversial colour scheme VINCENZO PACE



condor.com
D-ANRH
est. 1956

BOEING'S BABY

The Boeing 737 is now one of the world's best-selling commercial airliners, yet it almost didn't leave the drawing board. **Lee Cross** tells the short but sweet story of the 737-100

By the early 1960s, the Boeing family of airliners included the 707, 720 and 727. The three types were well received by their operators and had filled the long-haul, medium-haul and transcontinental markets. Boeing was also working on the world's first widebody, its 747 Jumbo Jet, and the 2707 Supersonic Transport (SST).

The dawn of the jet age had now led airlines to look at replacing their propellor-driven short-haul fleets with new jet equipment, and Boeing began to look at developing such an aircraft. The market was crowded, with US rival Douglas already offering the DC-9, while in Europe, there was the British Aircraft Corporation (BAC) One-Eleven, Fokker's F28 Fellowship and the Sud Aviation Caravelle, many of which had already been ordered by US carriers.

The company's CEO, Bill Allen, remained sceptical about launching another aircraft project. Two members of the Boeing board, however, were in full favour of the new entrant, including engineer Jack Steiner, who had designed the 727 and would go on to become the programme's chief engineer.

A baby is born

In May 1964, the Seattle-based plane maker officially launched a design study for a new twin-engine, short-haul aircraft to "complete the family of Boeing passenger jets", known as the Model 737. Several designs were put forward, including a T-tail with two engines mounted at the rear, with five abreast seating for between 60 to 85 passengers to operate flights up to 1,000 miles.

Steiner, meanwhile, wanted a bolder design that was different from its rivals to entice customers. Enter engineer Joe Sutter, father of the 747, who Steiner asked to assist with the programme. After apparently cutting up a drawing of the 737's initial design to find a better configuration, Sutter moved the engines under the wing. Housed in long slender nacelles instead of pylons like on the 707 and 720, this would lighten the airframe, offer reduced drag, an improved centre of gravity, a quieter cabin and easier access for maintenance. It also meant a smaller landing gear, and with the aircraft closer to the ground, access to its cargo compartments would be made easier at smaller, less well-equipped airports. Simpler ground handling would also be assisted by an internal airstair built into the port side passenger door, with the option of another at the port rear door.

With the new engine mounting, engineers needed to ensure that the wing was stronger than those found on its siblings. It also needed to meet various requirements, including good lift and low-speed handling characteristics for its short-field operations, with economical high-speed performance on the shorter sector lengths for which it was designed. The 737's wing was therefore thicker, with less acute sweepback than that of the 727. It did, however, feature leading-edge Kruger flaps, outer space panel leading-edge slats, and triple-slotted trailing-edge flaps found on its predecessor.

The 737 would also require a larger horizontal stabiliser to provide additional lateral stability in the event of an engine failure, an issue Boeing had not been concerned with on its previous quad- and trijet designs. This larger structure meant that the aircraft incurred a weight penalty, although engineers calculated that the new configuration would still save up to 70kg over the rear fuselage-mounted engine option.

To power the new aircraft, Boeing chose the Pratt & Whitney JT8D-1 low-bypass turbofans, which delivered 14,500lb of thrust each and had already been installed on the 727. These would later be substituted for the improved JT8D-7, which offered the same thrust rating at higher ambient temperatures.

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Lufthansa
Oldenburg
City Jet 737
EI

BELOW: ***Lufthansa Boeing 737-130, D-ABEI (c/n 19020) was delivered to the German flag carrier in April 1968***
AIRTEAMIMAGES.COM/ WOLFGANG MENDORF

ABOVE: ***In a bid to save costs and speed up the development process, around 60% of the structural components and systems found on the 727 were utilised on the Model 737 programme*** BOEING

In order to speed up the development process and regain some of the ground it had lost to its rivals, Boeing chose to use around 60% of the structural components and systems found on the 727. This included the same fuselage cross section, offering six-abreast seating instead of the previous five abreast, a feature the plane maker's marketing department jumped on, highlighting the more spacious interior, "unmatched" by its rivals. It also reduced costs, allowing Boeing to use standard cabin fittings such as toilets and galleys, something that was hoped would help attract existing 727 operators.

Jack Steiner presented the final design of the Model 737 to the world in October 1964 at the Air Transport Association maintenance and engineering conference.

New parents

With the final design locked in and facing a $150m development bill, Boeing was desperate to find customers for the new jet, preferably one of the main US domestic carriers. United and Eastern Air Lines were the only two that had not yet ordered one of the 737 rivals. United was looking to replace its Vickers Viscount fleet, inherited after its takeover of Capital Airlines in 1961. However, with performance restrictions at its Denver/Stapleton hub, the airline was reluctant to opt for the twin-engined design.

For this reason, Boeing turned its attention to Europe. Ken Luplow, the manufacturer's international sales manager, began discussions with German flag carrier Lufthansa. The airline, already a Boeing customer operating the 707, 720 and 727-100, was now looking to expand its operations and replace its Convair 240/340 and Vickers Viscount fleets.

Lufthansa was only too aware of Allen's continued scepticism about the project. The airline's CEO, Gerhard Hoeltje, requested that a meeting be held in Cologne to gain reassurances from the manufacturer that if no other orders were placed, the project would still go ahead.

With reassurance given and a request to stretch the aircraft to accommodate 100 passengers granted, finally, on February 19, 1965, Lufthansa became the 737's launch customer, ordering 21 aircraft. The historic order marked the first time that a non-US airline had become the launch customer for a US-built aircraft.

Bigger brother

For Boeing, a 21-aircraft order from a European airline was not enough, and an order from a US carrier for its newest airliner remained top of its priorities. In another blow to the project, just four days after Lufthansa signed on the dotted line, Eastern chose the DC-9. United, meanwhile, remained unconvinced that the new baby Boeing would meet its growing capacity requirements.

Its solution was to launch a stretched variant, the 737-200. With seating for up to 112 passengers via a fuselage extension of 193cm (76in), the larger variant was born in April 1965 after finally convincing United to order 40 examples.

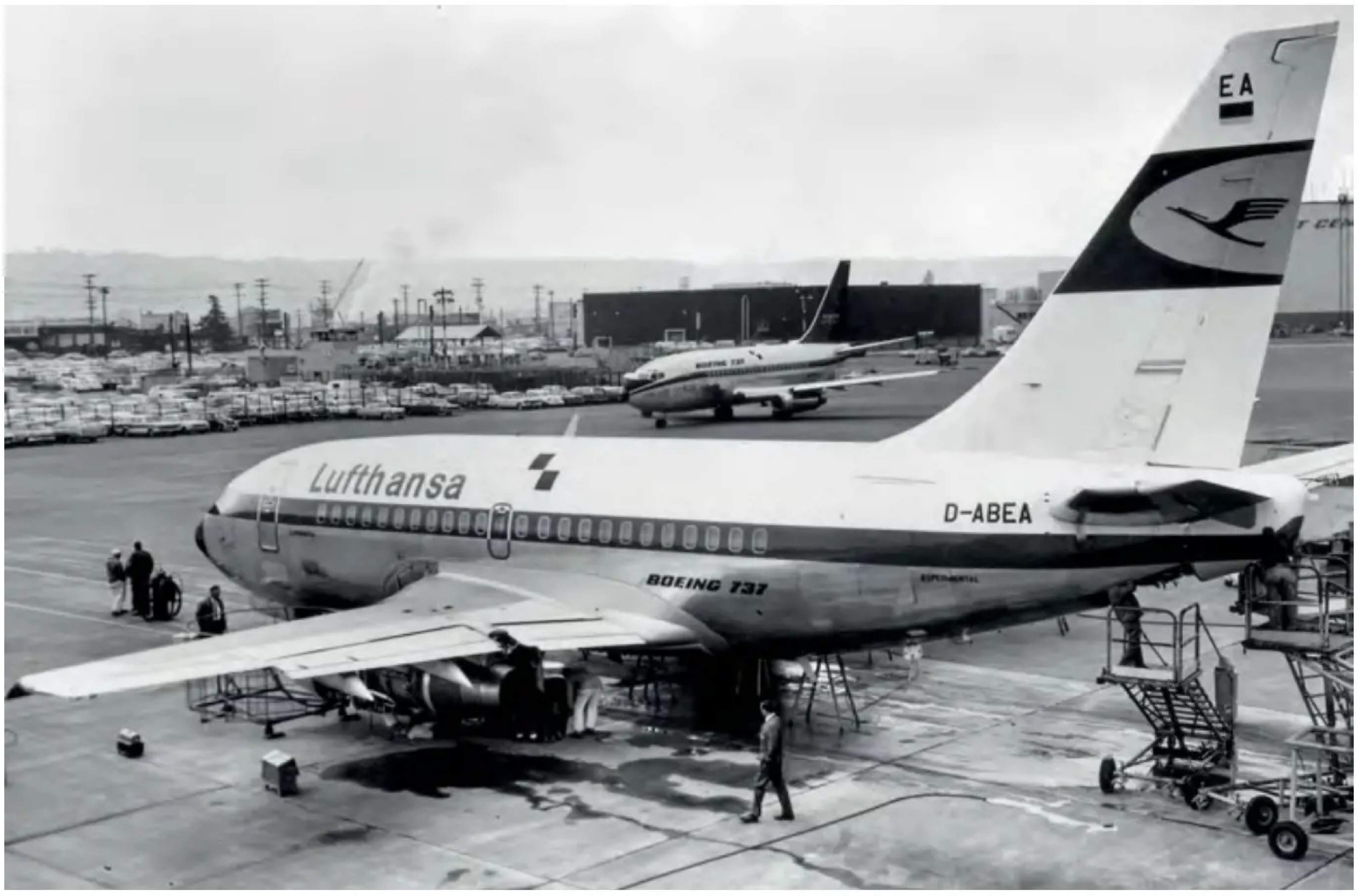
With firm orders for both variants, the 737 project was now secured, and detailed design work and construction of six prototypes began in earnest in the spring of 1965.

Designing two variants of the same aircraft simultaneously was a risk for the Seattle-based manufacturer and calls to cancel the -100 series before it had even got off the ground continued. However, it allowed for improvements between the models, including the relocation of the -100's

Boeing 737-100 Specifications

First flight	April 9, 1967
First delivery	December 28, 1967
Launch customer	Lufthansa
Number built	30
Seating capacity (max)	124
Length	94ft (28.65m)
Wingspan	93ft (28.35m)
Wing area	1,098sq ft (102m^2)
Overall height	36ft 10in (11.23m)
Max. take off weight	111,000lb (50,300kg)
Cruising speed	Mach 0.73
Max. range (fully loaded)	1,770 miles (2,850km)
Service ceiling	35,000ft (10,700m)
Engines (x2)	P&W JT8D
Thrust (per engine)	14,500lb

LEFT: ***The first ever Boeing 737, N73700 (c/n 19437)*** BOEING



ABOVE: ***Wearing Lufthansa's early livery is D-ABEA (c/n 19013) Coburg, the second aircraft off the production line and delivered to the airline in April 1968***
LUFTHANSA

rear bulkhead to the same position as found on the -200, allowing for three extra seats to be fitted.

On January 17, 1967, the world's first Boeing 737, N73700 (c/n 19437), was rolled out at the manufacturer's 'Thompson Site' at Boeing Field in front of the world's press and Boeing employees. Looking resplendent in the manufacturer's yellow and brown test livery, with 'Experimental' titles added by the forward and rear doors, the aircraft was christened by cabin crew from the 17 airlines that had placed orders for both the -100 and -200 at the time.

Baby's first flight

After months of ground testing, it was time to take Boeing's new baby into the air. At 1315hrs on April 9, 1967, the first flight took place with assistant director of flight operations Brian Wygle and chief test pilot Lew Lewick at the controls. The flight lasted two-and-a-half hours, and the pilots later reported that the aircraft had been "a delight to fly", adding it had "beautiful handling" and was "Very nimble. Very responsive."

Over the coming months, the aircraft went through rigorous testing, both on the ground and in the air, racking up some 1,300 hours of test flying by the six-strong fleet, which included the first -200, N7560V, which became N9001U (c/n 19039) with United. These flights subsequently revealed an issue whereby the aircraft produced excessive drag when flying at high cruise speeds. This drag put pressure on the wing spar, which required a redesign, leading to additional weight being applied to the airframe, that added penalties to its short-field performance capability.

Despite the setback, the 737 was granted Federal Aviation Administration (FAA) approval on schedule on December 15, 1967. This included for the first time, approval for automatic approaches in poor weather conditions under Category II conditions – defined as 30.5m (100ft) ceilings and 366m (1,200ft) forward visibility.

N73700 was then put to work on a sales tour, travelling across North and South America during 1968, followed by an Australian tour in 1972. The airframe was also later used to test a gravel kit to allow the 737 to operate from unpaved runways in remote locations. The test kit featured a deflection ski behind the nose gear and an oversized main gear with protective shields over the hydraulics and brake cables.

First day at work

Lufthansa received its first 737-130, D-ABEC (c/n 19015) *Osnabrück*, on December 28, 1967. It was transferred to Tuscon, Arizona, and used for crew training in January 1968.

The first aircraft to be delivered to Germany was D-ABED (c/n 19016) *Flensburg* on February 2, 1968. Entry into service followed on February 10. Dubbed the 'City Jet', Lufthansa's 737s were fitted with 90 seats in a two-class layout: eight in first and 82 in economy. The type was initially used on internal German flights before being moved onto other European routes, replacing the 727 'Europa Jets', which were transferred to longer flights for which they were better suited.

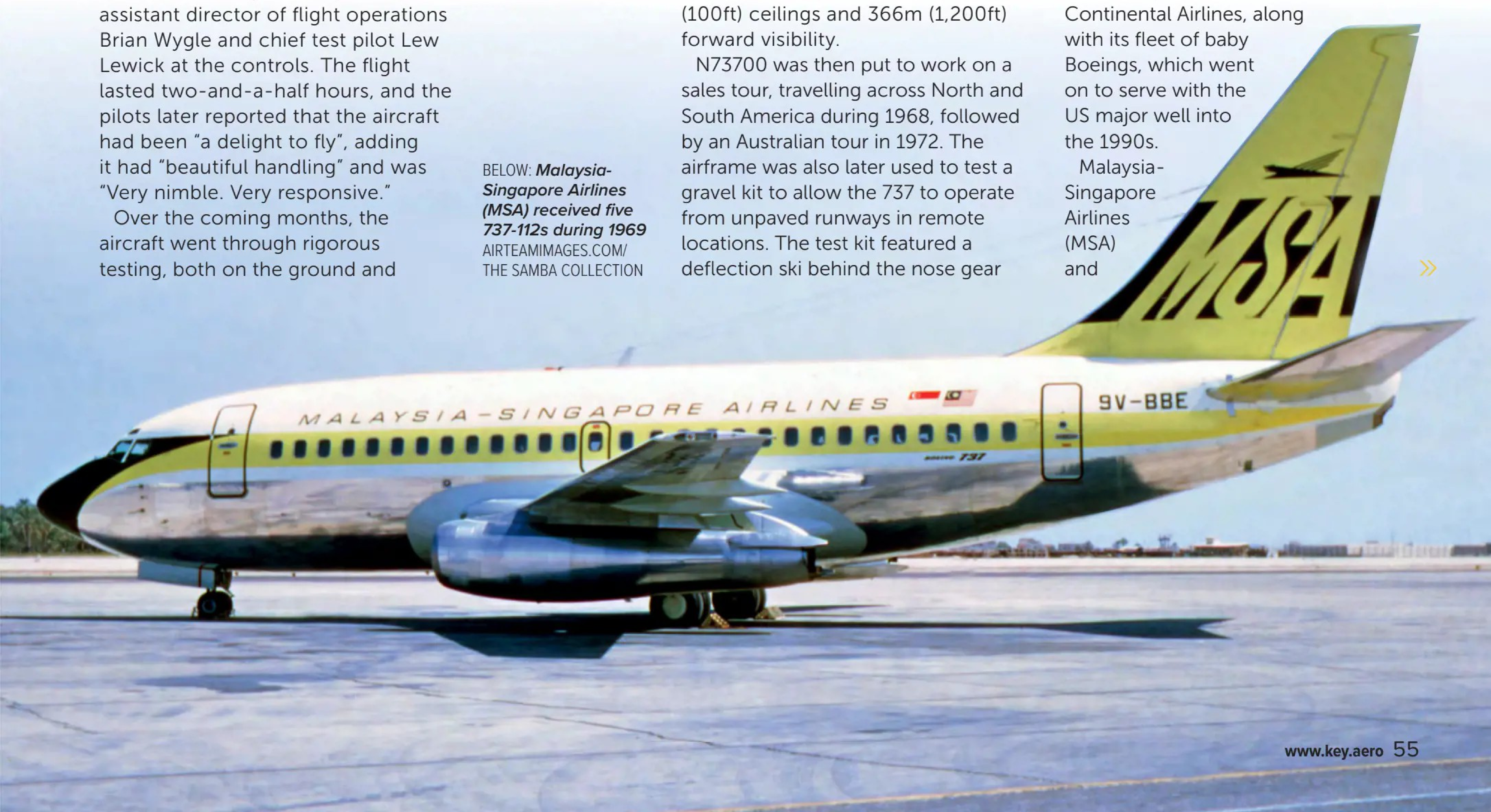
The last airframe to be delivered to Germany was D-ABEY (c/n 19794) *Worms*, which arrived in February 1969. In total, Lufthansa would operate 21 -130s, three of which also served with the carrier's charter subsidiary Condor: D-ABEK (c/n 19021) *Baden-Baden*, D-ABEL, (c/n 19022) *Mülheim* and D-ABEM (c/n 19023) *Marburg*. Two additional airframes, D-ABEZ (c/n 19795) and D-ABEJ (c/n 19796) were not built.

During the 1970s, the aircraft provided excellent service with the airline. Replaced by the 737-230 Advanced, retirement began in 1981, with the last example, D-ABES (c/n 19029) *Friedrichshafen*, leaving in May 1982. Four of the former German airframes went to Far East Air Transport, Taiwan, while most found new lives with low-cost carrier People Express in the US. In February 1987, People Express was swallowed up by Continental Airlines, along with its fleet of baby Boeings, which went on to serve with the US major well into the 1990s.

Malaysia-Singapore Airlines (MSA) and

»

BELOW: ***Malaysia-Singapore Airlines (MSA) received five 737-112s during 1969***
AIRTEAMIMAGES.COM/ THE SAMBA COLLECTION



Condor
D-ABEL

The charter arm of Lufthansa, Condor, would operate three 737-130s, transferred from its parent, including D-ABEL (c/n 19022) CONDOR

PEOPLExpress
N413PE

Many of Lufthansa's -130s found a new lease of life in the US, operating for low-cost carrier People Express and subsequently Continental Airlines following their merger. They would go on to serve with the latter well into the 1990s AIRTEAMIMAGES.COM/CAZ CASWELL

Boeing 737-100 operators

Airline	Number operated
Aero Continente	2
Air California/AirCal	2
Air Florida	6
Aloha Airlines	2
America West Airlines	5
American Airlines	2
Ansett New Zealand	4
Asia Aviation Services	3
Avianca	2
Challenge International Airlines	1
Condor	3
Continental Airlines	17
Copa Airlines	3
Far Eastern Air Transport	4
Faucett	1
Lufthansa	22
Luftwaffe	2
Magnicharters	2
Malaysia-Singapore Airlines	5
Mexican Air Force	1
People Express	17
Presidential Air	1
SARO	3
Savar	2
Sierra Pacific Airlines	2
Singapore Airlines	5

Avianca were the only other customers who ordered the 737-100. MSA received five examples: 9M-AOU (c/n 19768), 9V-BBC (c/n 19769), 9M-AOV (c/n 19770), 9V-BBE (c/n 19771) and 9M-AOW (c/n 19772). All five were later taken by Singapore Airlines when MSA disbanded, and they served until the end of the 1970s before heading to Air Florida.

Avianca, meanwhile, received its pair of 737-159s, HK-1403 (c/n 19679) and HK-1404 (c/n 19680), in November 1968. Both remained with the carrier until late 1971 when they were acquired by the German Luftwaffe. The duo then headed to the US, where they flew for Aloha Airlines and AirCal. The latter was taken over by American Airlines in 1987 and the pair lasted less than a year in the new owner's fleet.

Flying laboratory

N73700 completed its career with Boeing following a tour of the Far East in May 1973. It was subsequently sold to NASA in June 1974 and re-registered as N515NA. Based at the Langley Research Centre in Hampton, Virginia, the aircraft was then heavily modified to become the Transport Systems Research Vehicle (TSRV) flying laboratory.

air florida
N46AF

All five of MSA's 737-100s went to the newly formed Singapore Airlines (SIA), remaining until the end of the 1970s when Air Florida acquired them. N46AF (c/n 19768), formerly 9M-AOU with MSA and 9V-BFD with SIA, is seen here in a hybrid livery of its former and new owners AIRTEAMIMAGES.COM/CARL FORD

Ansett New Zealand would operate four 737-100s, one from MAS and three ex-Lufthansa airframes, including ZK-NEC (c/n 19016) AIRTEAMIMAGES.COM/WORLD AVIATION ARCHIVE

NASA 515, as it was known, featured two flight decks: the conventional one at the front and a second, fully functional operations research flight deck located in the forward cabin. Throughout its life with NASA, the aircraft carried out countless pioneering flight investigations, including electronic flight displays or 'glass cockpits', inflight energy management, 3D and 4D navigation, runway friction studies, airborne clear air turbulence and wind shear detection and warning systems.

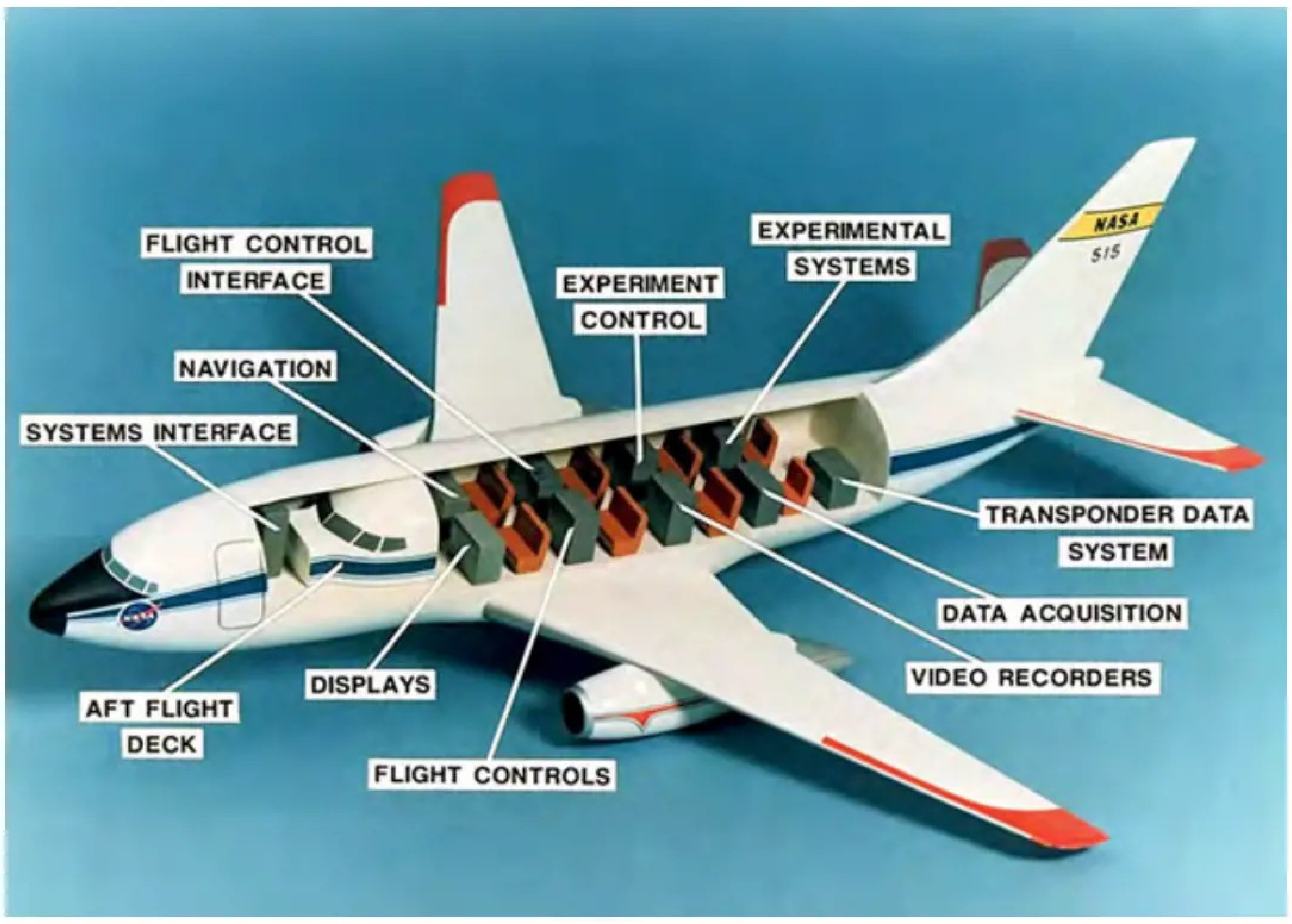
NASA retired the aircraft in 1997 and transferred it to the Museum of Flight in Seattle, where it is now on display.

Keeping it in the family

The increase in the volume of air traffic in the late 1960s meant that Boeing's focus moved to the larger and more advanced 737-200 series. After selling just 30 examples, the -100 series was discontinued.

However, the first incarnation of the 737 family proved its worth and remained in service for many years with the various airlines with which it flew. The last airworthy example, OB-1745 (c/n 19014), belonging to Peruvian carrier Aero Continente, was finally retired in 2003. It was the third example off the production line, delivered to Lufthansa in December 1967 as D-ABEB *Regensburg*.

Of course, the 737 went on to become one of the world's biggest-selling single-aisle airliners, with countless variants produced. As of December 2024, an incredible 11,925 have been delivered to customers around the world, and there are a further 4,765 on order. **AW**



RIGHT: ***NASA's Systems Research Vehicle (TSRV) flying laboratory carried out countless pioneering flight investigations during its career with the agency*** NASA

BELOW: ***The world's first 737, still wearing its NASA livery, is now on display at the Museum of Flight in Seattle*** THOMAS HAYNES

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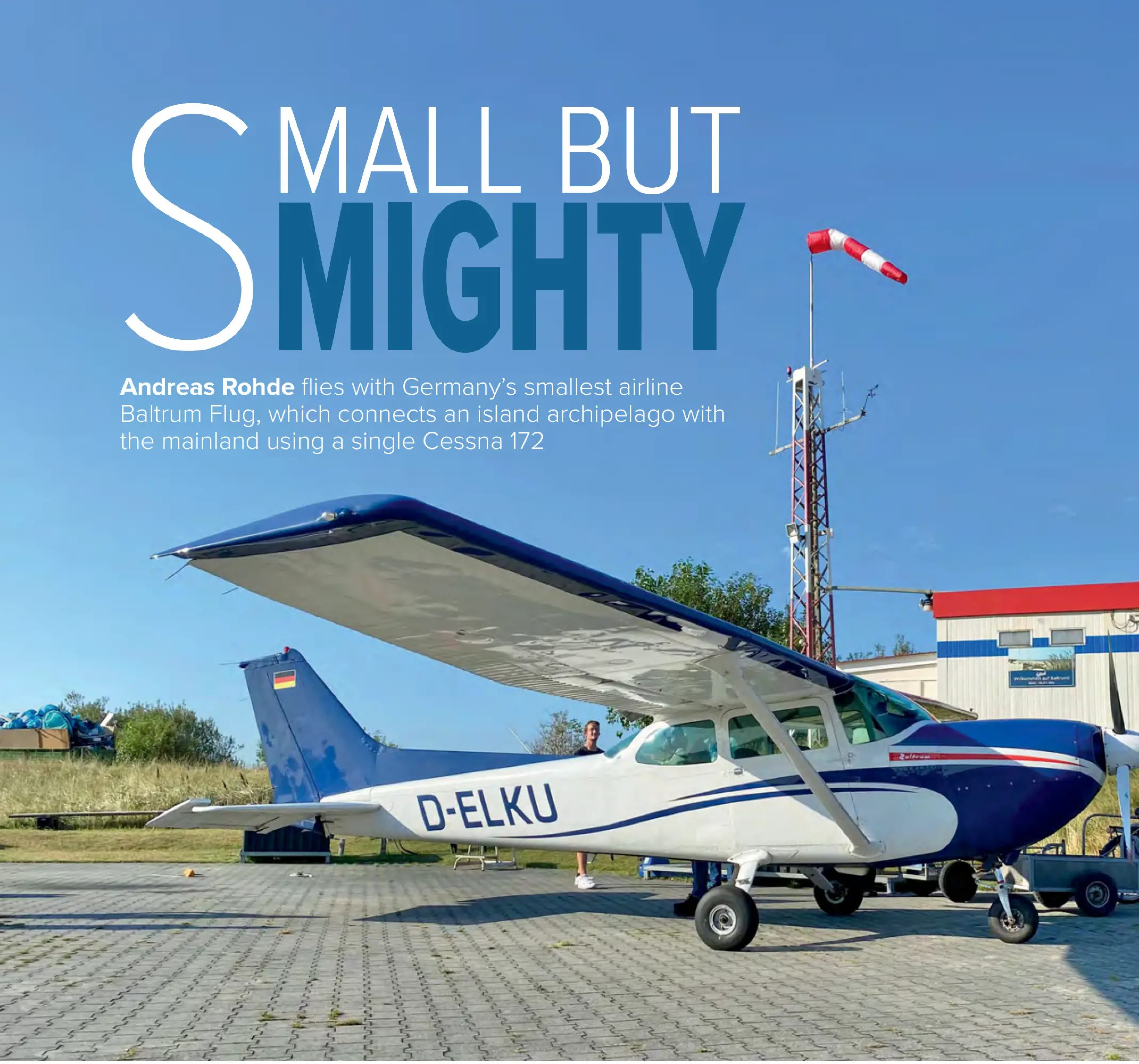
SMALL BUT MIGHTY

Andreas Rohde flies with Germany's smallest airline Baltrum Flug, which connects an island archipelago with the mainland using a single Cessna 172



ABOVE: ***The airline's Cessna 172 sits next to the Baltrum 'Terminal'*** ALL IMAGES ANDREAS ROHDE

Along Germany's East Frisian North Sea coast, Baltrum Flug offers a unique 'airline' experience. With its fleet comprising a single Cessna 172 with only three available passenger seats, it is not only Germany's smallest air carrier, but also serves the country's smallest commercially used airfield, located on the island of Baltrum.

Located just a few miles off the coast, the islands are notorious for their northern maritime climate with fast-changing weather. Despite this, they've been a popular holiday destination for more than a century. Access by sea, however, has always been affected by weather, tidal conditions and treacherous waters. Consequently, aviation made early inroads into the islands to offer more convenient travel alternatives, which at least, were not dependent on the tides.

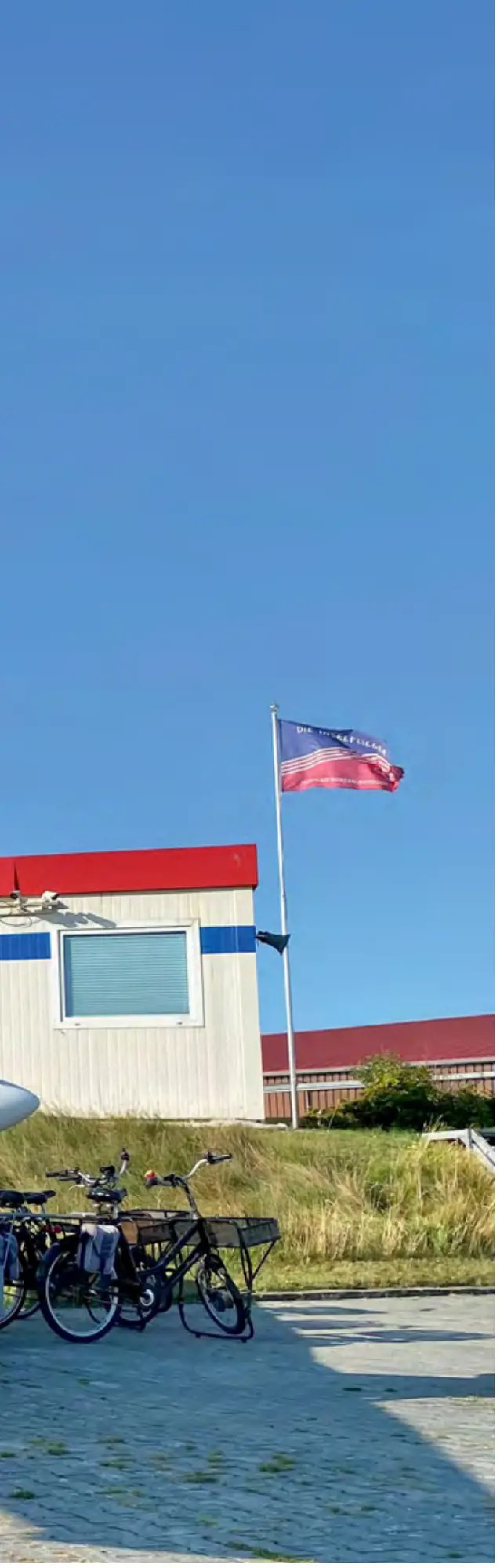
Most of Baltrum's neighbouring islands featured airfields, and even a scheduled air-service, well before World War Two. Yet, lacking a suitable stretch of land, the small island of Baltrum had to wait a little longer. Finally, in 1972 the first rudimentary airfield was opened with a 1,400ft grass runway.

In 1976, Baltrum Flug was set up by local interests to take over the responsibility for airfield operations. Just one year later, the organisation entered the 'airline' business when it started operations with a pair of single-engine Cessna 172s, offering regular air service to and from the island for the first time.

From the very beginning, the little airline faced some unusual challenges. Dotted with rabbit holes, the island's runway quickly earned its nickname of 'Hoppel-Island' (Bounce Island) among local pilots. More serious disturbances resulted from tidal flooding during severe storms. Since the runway was built outside of the protecting dykes, storm flooding could render the airfield unusable for weeks at a time. This situation was only resolved in 2002 when Baltrum received a concrete runway, albeit shortened to 1,180ft. As the reduced runway length precluded operations of any larger aircraft, such as the Britten-Norman Islander, Baltrum Flug's Cessnas have been exclusively used on the carrier's services ever since.

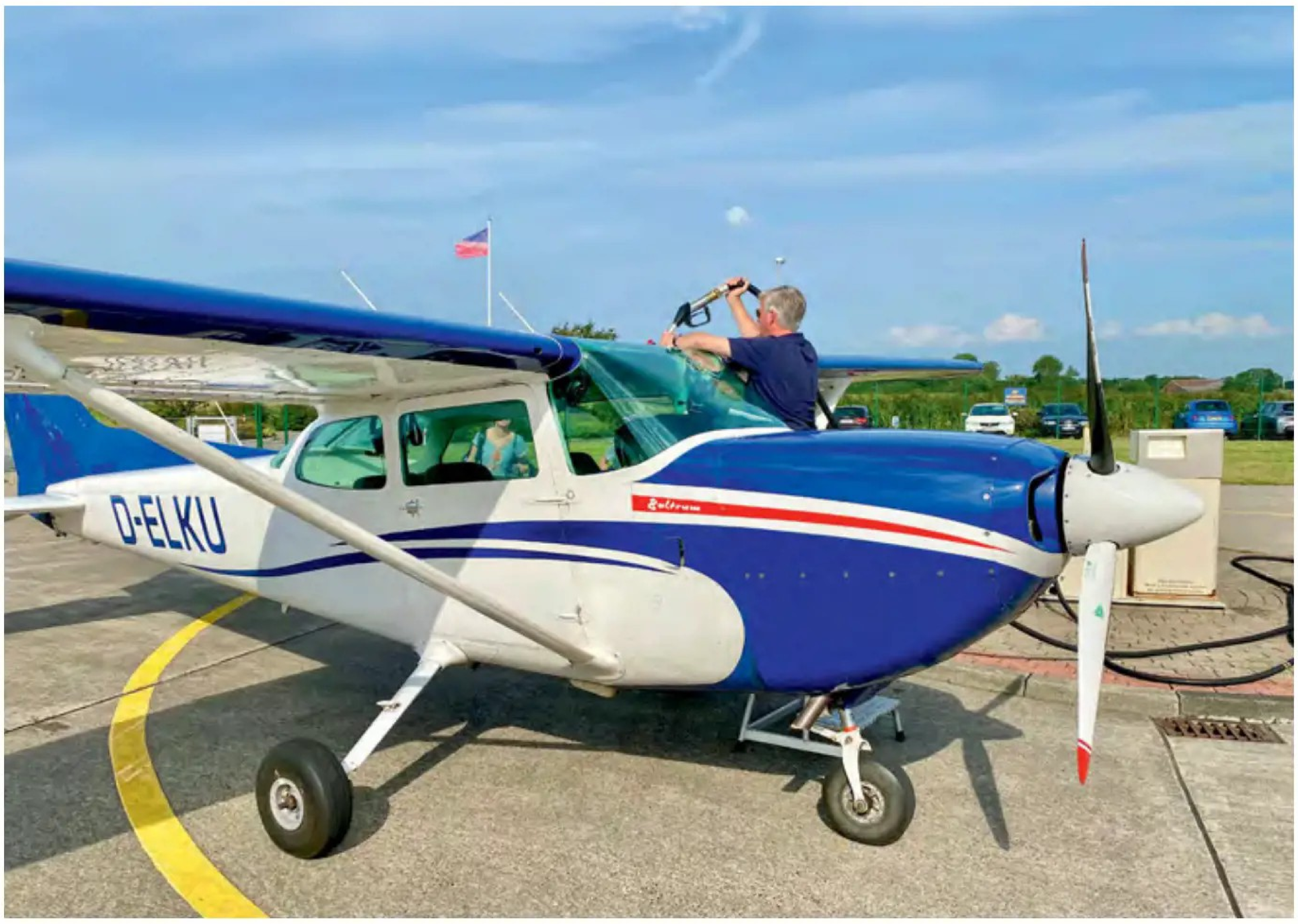
Operational co-operation

Baltrum Flug entered a co-operation with LFH (Luftverkehr Friesland Harle) in 1983 and transferred its Cessnas to the new joint operation. In 2011, LFH joined forces with competitor FLN (Frisia Luftverkehr Norddeich) and the two Cessnas were again transferred to the new operating



RIGHT: *Pilot, airport operator, hotel owner and chef Olaf Klün*

BELOW: *Klün refuelling the Cessna at Norddeich for its return flight to Baltrum*



certificate. As a result of this merger, Baltrum Flug regained independence, yet without aircraft, it was left to trade as a general sales agent for flights to Baltrum, while operations were carried out by FLN on its behalf, exclusively using one of its former Cessna 172s.

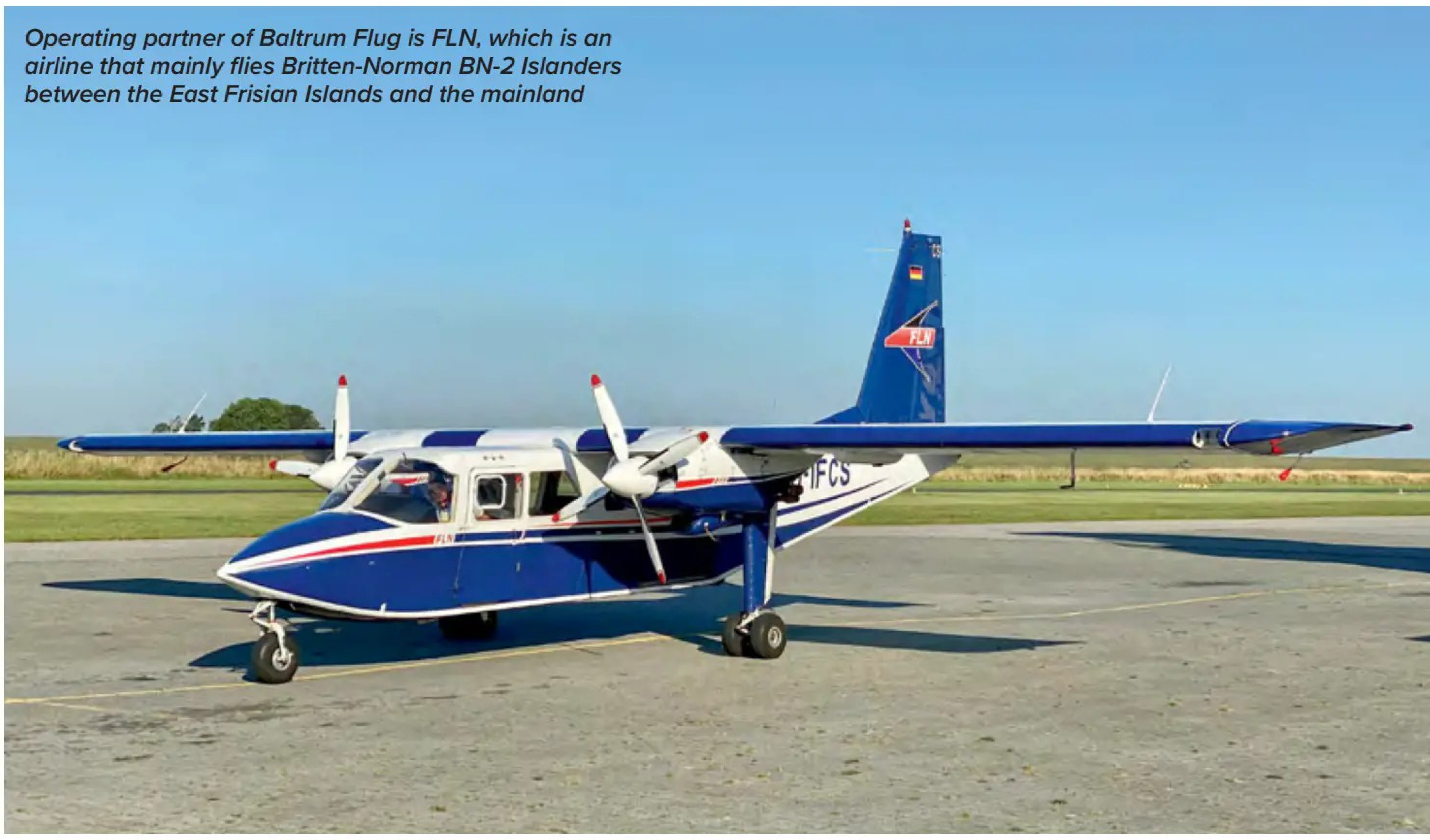
However, since 2013, Baltrum Flug has regained responsibility for the island's airfield.

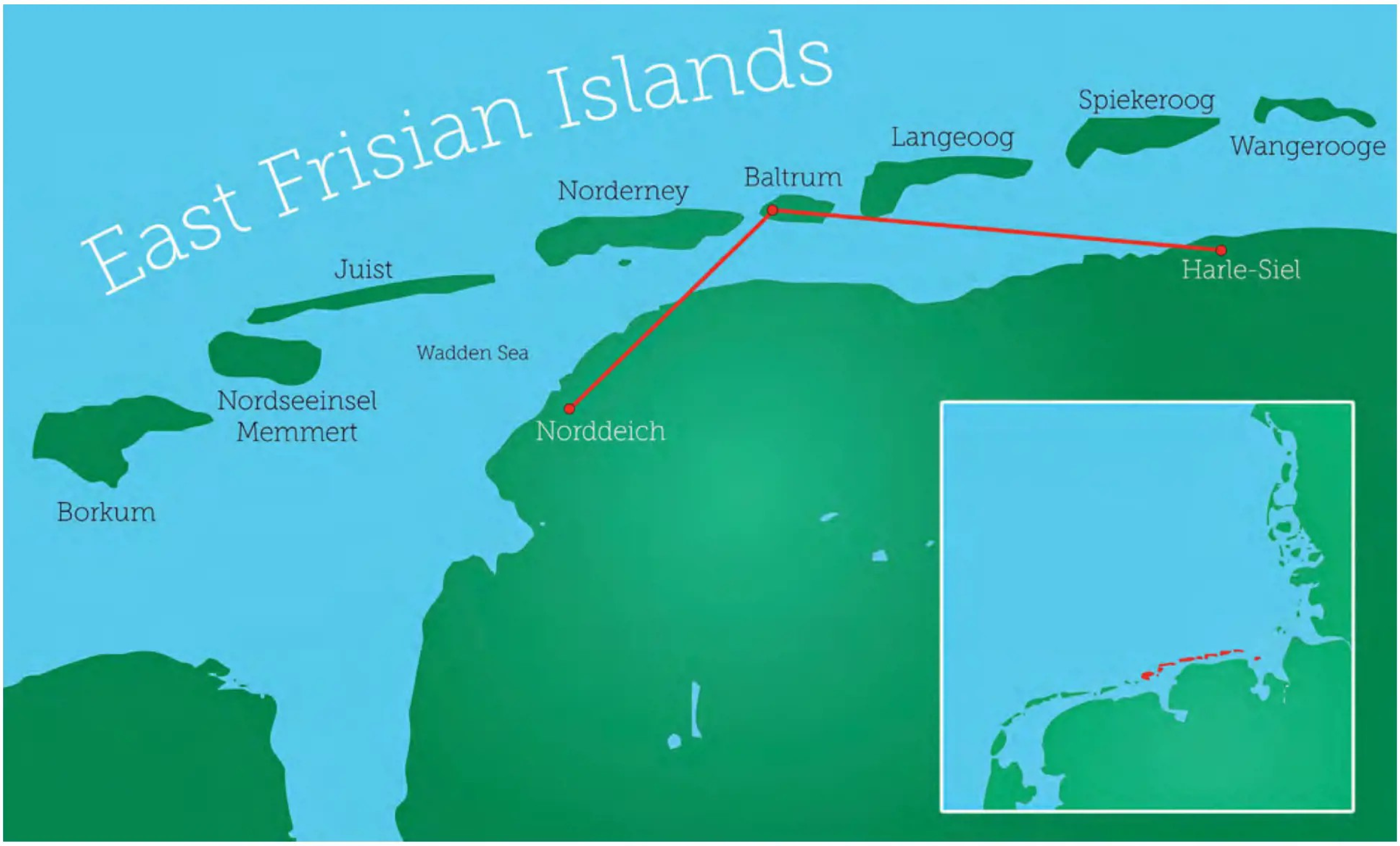
The aircraft used on the flights D-ELKU (c/n FR17200656) is a Reims-Cessna FR172K Skyhawk XP, featuring an uprated 195hp engine and a variable pitch propeller, which provides the additional power required for the operations at Baltrum's short runway.

Passengers and freight

Irrespective of the many changes in the company's structure, its operational scope has seen little changes over

Operating partner of Baltrum Flug is FLN, which is an airline that mainly flies Britten-Norman BN-2 Islanders between the East Frisian Islands and the mainland




East Frisian Islands
Spiekeroog
Wangerooge
Langeoog
Baltrum
Norderney
Harle-Siel
Juist
Wadden Sea
Nordseeinsel
Memmert
Norddeich
Borkum

LEFT: ***Newspapers being loaded aboard the Cessna***

the years. Besides connections from Baltrum to Norddeich and Harlesiel, the company offers charter and scenic flights, as well as freight and newspaper transport. Due to the lack of fuel on Baltrum, flights to the island must always be planned with roundtrip fuel to the next destination on the mainland.

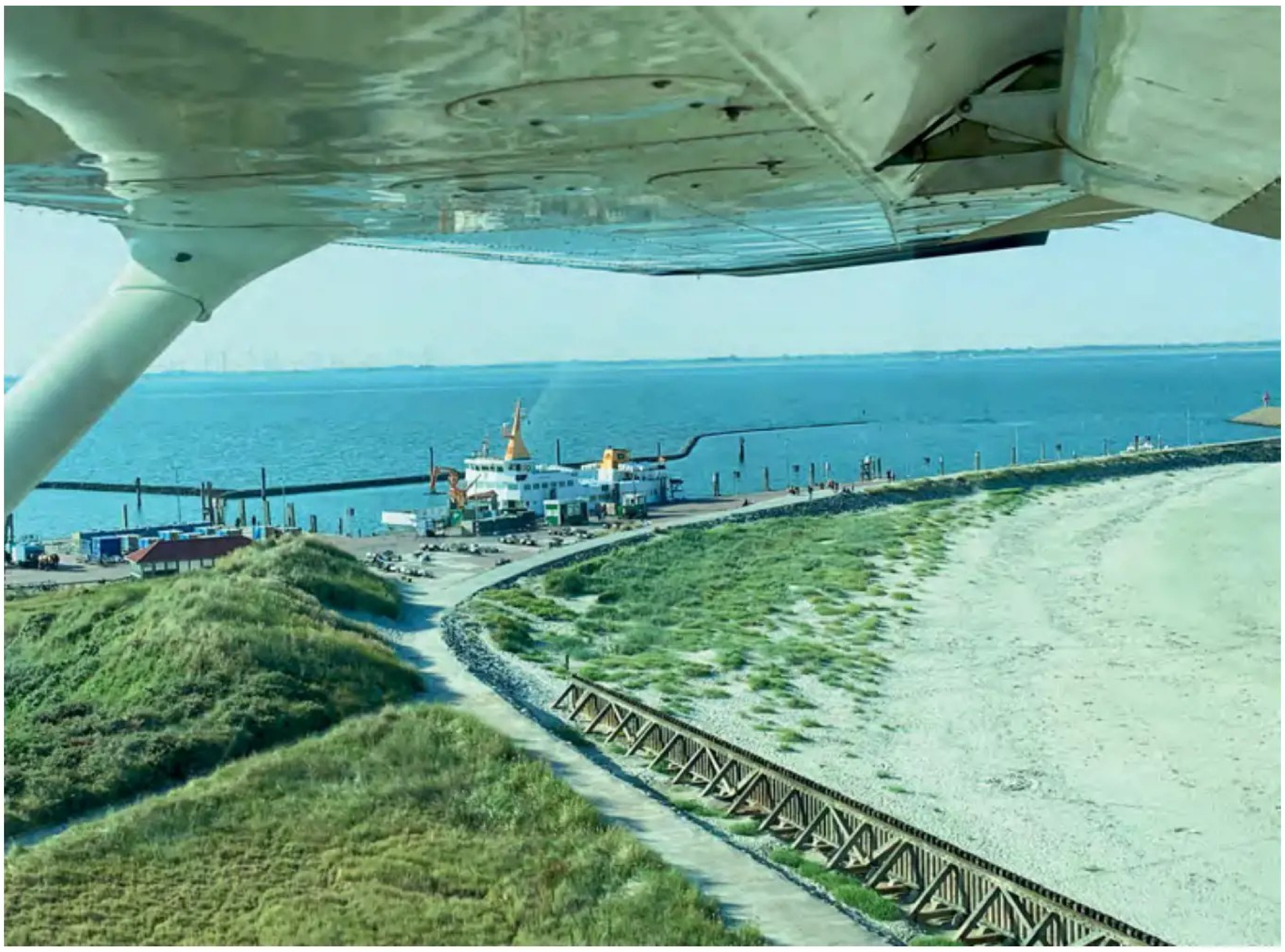
Consequently, when the Cessna arrived at Norddeich for our flight to Baltrum, it first taxied to the fuelling station to uplift fuel to Baltrum and return, before being loaded with our bags and the morning newspapers for the island's holiday guests.

The flying chef

The pilot on the day of the author's visit was Olaf Klün, the company's

LEFT: ***On approach to Baltrum, passengers are afforded a nice view over the eastern end of the neighbouring island of Norderney***

Approaching Baltrum



ABOVE: ***On short final to Baltrum, the Cessna passes the island's ferry harbour, the operating times of which are subject to the tides***

owner and an FLN pilot. In his latter role, Klün is employed by FLN to fly the Baltrum services, which FLN in return operates on behalf of his company Baltrum Flug. And if this was not enough, Klün also owns Hotel Witthus on the island. Besides his flying duties, as a professional chef, Klün loves to prepare local delicacies for his guests. He is a busy man, especially during the peak summer season.

On the morning of our flight, he had already started the day preparing breakfast for his guests, then had flown a charter from Baltrum to nearby Borkum island and had ferried the aircraft empty to Norddeich, to pick up his return load.

With two adults and one child, plus baggage and the newspapers, our flight was fully booked. Flying time from Norddeich to Baltrum was a mere eight minutes – hardly enough time to fully enjoy the gorgeous views over the Wadden Sea. From our cruising altitude of just 1,000ft we could even spot seals on the eastern tip of Norderney Island. All too soon, the flaps were extended again as we turned onto short final to Baltrum.

Seen from the approaching aircraft, the Baltrum runway appeared fairly short. With little room to waste, Klün brought the Cessna in low, touching down right at the beginning of the runway. On the small apron, the aircraft was awaited by local merchants, eager to collect the latest newspapers for their shops and hotels. Klün himself had no time to spare. As soon as he had the Cessna secured, he grabbed his bike and headed for his hotel, where the preparation of lunch required his attention.

Later that afternoon, he would be back at the airport, flying a couple more rotations to Norddeich. Up to ten round trips to the mainland can be flown on busy days.

The fare

Overall, while relying on FLN for the operation of its flights, Baltrum Flug provides a unique island service that is well worth the modest fare. Unlike other airlines, Baltrum Flug sells its flight by the aircraft, not by the seat. The present one-way rate is €130 (£108), for which customers may take up to three persons, but no more than 210kg combined, including baggage.

RIGHT: ***Klün bringing his Cessna low over the grass in front of the Baltrum runway***

D-ELKU
INSEL MARKT

RIGHT: ***From aircraft to bike – cargo delivery at Baltrum***

HAS AIR MIDDLE CHILD

The Airbus A330neo has spent its entire existence playing catch-up to the Boeing 787 Dreamliner. Now three-quarters of the way through its first decade, **Martin Needham** considers the Toulouse-built twin-aisle's sales potential

Aircraft development isn't always an easy process. Some designs come organically, others are a simple matter of improving what went before. The Airbus A330neo (the suffix standing for New Engine Option) wasn't quite either. In the eight years prior to its launch in 2014, Airbus had been caught up in a debate about what the A350 should or shouldn't be, before what would become the A330neo was kicked into the long grass.

In early 2006, Steven Udvar-Házy – who was then the president of International Lease Finance Corporation (ILFC) – had described the A350 as "a Band-Aid reaction to the [Boeing] 787". His comments were echoed by his then-GECAS counterpart, Henry Hubschman, and now-former Singapore Airlines CEO, Chew Choon Seng, who questioned why Airbus hadn't "gone the whole hog" and designed a new fuselage having developed a new wing, cockpit and empennage for the type.

Airbus ripped off the Band-Aid and responded with the A350 XWB three months later at that year's Farnborough International Airshow. It worked, with Singapore Airlines signing for 20 jets and 20 options within the week, but a true A330 successor was still nowhere to be found.

Calls from AirAsia X for a re-engined A330 in late 2010 would largely fall on deaf ears, but four years later a renewed request from Delta Air Lines wanting to replace ageing Boeing 767s had the European manufacturer sit up

neo
A330neo
F-WTTE
AIRSPAC
a new cabin experience

BELOW: *The A330neo was launched by Airbus at the 2014 Farnborough Airshow*
AIRBUS/S RAMADIER

BUS' COME OF AGE?

and take notice, with lessors Air Lease Corporation and CIT Leasing (now part of Avolon) piling on the pressure and airing concerns about the A350-800's efficiencies.

A full eight years after Airbus bowed to calls to redesign the A350, it launched the A330neo while Rolls-Royce announced it would be developing a Trent 7000 to power the new widebody. However, more than a decade behind Boeing and the Dreamliner, could the A330neo catch up after a comparatively sluggish start?

As of December 2024, the type had chalked up 374 orders with all but 12 for the larger -900 model, while 141 jets had been delivered and were in service with more than 20 airlines.

RIGHT: ***In the years prior to launch, Airbus had devoted significant energy to responding to Boeing's then-new 787 Dreamliner***
BOEING

neo
A330-900
AIRBUS

Virgin
F-WWCG
2018
AZ

It's nowhere near the 1,000 that Airbus had optimistically hoped to have sold when it launched the jet, but it's not all doom and gloom.

Return to relevancy?

Indeed, the A330neo finally appears to be making something of a comeback. Last year's Farnborough Airshow was largely derided as a damp squib, but at the event and in the four weeks following, the widebody scored 57 firm orders and 60 options from four carriers – Cathay Pacific, flynas, VietJet Air and Virgin Atlantic. While repeat custom from Virgin will undoubtedly have been welcomed in Toulouse, it's the 30-strong Cathay deal that has been the major shot-in-the-arm the twin-aisle jet needed.

As Boeing continues to wrestle with quality control and supply chain issues, Airbus is well aware that airlines aren't prepared to twiddle thumbs or sit on hands while its rival gets its house in order. The current Dreamliner backlog is close to 800 aircraft, which means any airline signing up for 787s won't see their first jet until well into the next decade, even if Boeing could magically increase production rates from today's four-a-month up to the ten-a-month target it set in July 2022. Push inevitably comes to shove and with A330neo deliveries achievable as close as 2028, airlines are going to be swayed at least somewhat by the opportunity to get their hands on new metal sooner rather than (much, much) later.

But, as the past 11 years have demonstrated, there's no guarantee that airlines will queue up for a new widebody. Indeed, some of the more ardent A330ceo (Current Engine Option) users are unlikely to be queuing up for the neo. Sanctions against Russia and Iran prevent Aeroflot and Iran Air from ordering the new variants, while economic woes in Argentina are likely to prohibit state-owned Aerolineas Argentinas from acquiring new airliners, with a second attempt at privatisation a much more likely prospect.

So, who does that leave as likely targets for Airbus' sales teams tasked with trading in three-thirties?

Western Europe

International Consolidated Airlines Group (IAG) likely isn't at the top of anyone's list for a potential A330neo purchase. The group's biggest airline – British Airways – flies no fewer than 41 787s and is part of an elite club operating all three Dreamliner variants. While the Heathrow-based heavyweight has flown the US-built widebody since 2013, its current opinion of the type is likely to be less than favourable as Rolls-Royce Trent 1000-related wretchedness continues to wreak havoc with its route network. Powerplant problems have allegedly prompted the carrier to pull its Bahrain, Dallas/Fort Worth and Kuwait services for summer 2025. Additionally, frequencies to Miami and New Delhi will either be reduced or capped at current levels. Such is the level of frustration that, at the Farnborough Airshow last year, BA confirmed it was switching engine suppliers to GE Aviation and the GEnx-1B for its incoming 787s.

Might Dreamliner dilemmas be enough to turn IAG's head? BA's sister airlines Aer Lingus, Aer Lingus UK, Iberia and LEVEL operate a combined 42 A330ceos with LEVEL having received a former Virgin Australia example as recently as December. Having had a ring-side seat to BA's twin-aisle torment, a combination of order backlogs and engine issues coupled with the ease of converting type ratings and component commonality might be what it takes for IAG to sign up for the neo. Indeed, hardware-induced headaches at Waterside may mean BA itself is willing to take a punt on the A330-900 as a 777-200ER successor, especially as the flag carrier's oldest jets are now more than 28 years old.

However, it's not quite as straightforward as that. Aer Lingus – which operates eight A321LRs and has accepted the first of at least four XLRs – appears to be shifting a portion of its operations towards a single-aisle, long-haul model, as does Iberia, which inducted its – and the world's – first A321XLR during October.

ABOVE: ***Virgin Atlantic has been a reliable Airbus customer over the years, especially of the A330 as it has now placed orders for a total of 19 A330neos***
AIRBUS/PASCAL PIGEYRE/MASTER FILMS

BELOW: ***Could an IAG airline be next to order the A330neo?***
AIRBUS/PASCAL PIGEYRE/MASTER FILMS

Scandinavia

Airbus has already scored two A330neo deals in Denmark, with Air Greenland and Sunclass Airlines opting for the A330-800 and -900, respectively. However, Scandinavia boasts two further airlines that are likely A330neo buyers.

Finnair was an early adopter of the A350-900, having used the type to replace its A340-300s and increase its long-haul network from October 2015. However, the Finnish flag carrier has kept its powder dry where supplanting its eight A330-300s has been concerned. The widebodies have an average age of 15 years so their replacement isn't quite as urgent as that of its near-quarter-century-old A319s and A320s. That being said, the airline will be acutely aware of their advancing ages and the A330-900's spares commonality with its predecessor as well as its shared type rating mean the neo is a very logical fit for the Finns' future fleet.

ABOVE: ***The A330neo could be a fitting replacement for British Airways' ageing Boeing 777-200ERs*** BRITISH AIRWAYS/NICK MORRISH

BELOW: ***Air Greenland is one of only three airlines currently operating the smaller -800 variant of the A330neo*** AIRBUS/ ARTEM TCHAIKOVSKI/ MASTER FILMS

Further south, SAS Scandinavian Airlines is almost an all-Airbus operator. Indeed, the carrier has nearly completed the overhaul of its single-aisle fleet with A320neo Family jets replacing a mixture of A319ceos, A320ceos, A321ceos and 737NGs. A solitary Boeing narrowbody remains in the form of 737-700, LN-RPJ (c/n 30192), which has played a crucial role in the Russo-Ukrainian war transporting injured Ukrainian combatants and critically ill patients to hospitals across Europe since June 2022.

At the thicker end of its fleet, SAS expedited the once gradual phasing out of its eight A340-300s at the start of the COVID-19 pandemic, with four A350-900s replacing the quadjets. However, it also flies eight A330-300s, the oldest of which are more than 20 years old. As the A330ceo, A330neo and A350 all share a common type rating, it would be logical for SAS to opt for the Trent 7000-powered jet when it begins looking at returning its widebody fleet to pre-COVID levels as well as replacing its older twin-aisle jets.

Further east

As early as last June, *Bloomberg* reported that Airbus has been in talks with China to acquire up to 100 A330neo jets. It shouldn't come as a massive shock, even discounting the country's 11 A330 operators fielding a combined fleet of 208 jets. China's relationship with the US was on the rocks prior to Donald Trump's presidential re-election in November and it had halted the import of Boeing products on several occasions between 2019 and July 2024.

Currently, just one Chinese carrier – Hainan Airlines – has signed for

»

SAS
Scandinavian Airlines

ABOVE: ***SAS Scandinavian Airlines is fielding a fleet of eight A330-300s – could it be in line to order the next-generation neo?*** AIRBUS/F LANCELOT/MASTER FILMS

a neo variant, meaning there is plenty of potential for the type to increase its presence in the Far East. Indeed, while Air China, China Eastern Airlines and China Southern Airlines have each ordered and now operate the Dreamliner, they continue to field fleets of 46, 56 and 26 A330s, respectively. The advantages of spares commonality and differences training for A330ceo pilots go without saying, but China also plays host to an A330 Completion and Delivery Centre at Tianjin. Compared with queuing for additional 787s, this would provide Chinese airlines with even quicker access to factory fresh aircraft with better fuel efficiency, especially given the A330neo has the shortest order backlog of any widebody airliner.

The Americas

The US, Canada and Mexico don't offer a huge deal of potential for the A330neo. Indeed, Air Canada, American Airlines, United Airlines, WestJet and Aeromexico are all committed to the 787 Dreamliner and Delta Air Lines has already signed up to its Blagnac-built rival. However, the continent isn't completely sewn up.

Air Transat was among North America's earliest adopters of the A330, receiving its first example in October 1999. The Montreal/Trudeau-based carrier currently boasts a 16-strong fleet split between 14 -200 models and a pair of the larger -300s, which have an average age of 19 years.

The airline began realising its fleet renewal programme in early May 2019 when it accepted its first A321LR – a move that enabled the carrier's remaining A310-300s to be phased out by the following March. Testament to their flexibility, the A321LRs have since been placed on a broad range of routes incorporating destinations in the Caribbean, Mexico, Colombia, Costa Rica, Panama and Peru on the western side of the Atlantic. However, the same jets also connect Montreal and Toronto with the likes of Glasgow, Manchester, Marrakesh, Lisbon and Paris in Europe and North Africa.

As the carrier is clearly a fan of the A321LR, it won't come as too much of a shock to learn it is poised to accept four A321XLRs on lease from Air Lease Corporation beginning in late 2025.

However, Air Transat also rosters its A330s on those aforementioned routes. The airline is therefore heading towards a major crossroads where it will be required to choose between the simplicity of an all A321LR/XLR fleet and the flexibility that a second, larger type offers in terms of capacity. While its A321LRs have made advances as far into Europe as Athens and the XLR will bring even more of South America,

中国国际航空
AIR CHINA

BELOW: ***Air China, China Eastern Airlines and China Southern Airlines continue to field fleets of 46, 56 and 26 A330s, respectively*** AIRBUS/H GOUSSE/MASTER FILMS

ABOVE: ***Hainan Airlines is the only Chinese carrier to have signed for an A330neo so far. The operator also holds a large fleet of 38 787 Dreamliners including ten -8s and 28 -9s*** BOEING

Africa and Europe within reach, is the carrier prepared to sacrifice capacity?

Up-gauge enabler

It's over questions similar to this that numerous airlines will be ruminating. While we've thus far focused on the major existing A330 and A340 operators that have made or could make the switch to the neo, the type is much more valuable than just a replacement for ageing widebodies.

Choosing between the simplicity of a single-type that can blur the lines between short, medium and long-haul, and the need for capacity beyond the abilities of the Airbus A320neo Family is a widespread dilemma. Aer Lingus has been quick to highlight the better economics of two A321LRs or XLRs compared with one of its Airbus A330ceos, but that argument is quickly undermined when presented with routes to slot constricted airports.

Cirium analyst Tim Chun-Hing Li stated in September: "Instead of viewing it strictly as a replacement for the Airbus A330ceo, the A330neo presents itself as an ideal type for operators looking to scale up their network and operations."

Prior to their respective acquisitions of the type, Cebu Pacific, Condor, ITA Airways, TAP Air Portugal and now VietJet Air had not operated more than ten A330s at any one time. However, they have each leveraged the aircraft to either up-gauge their current network or make moves into the long-haul market, even for low-cost carriers such as Cebu Pacific.

Indeed, the type's versatility can be typified by four airlines – Kuwait Airways, Sunclass Airlines, Delta Air Lines and the aforementioned Cebu Pacific.

The first has deployed its -800s on rotations of up to 13hrs 30mins between Kuwait City and New York/JFK, currently the longest commercial flight the type has operated, while Danish leisure carrier Sunclass routinely flies its -900s to destinations in Spain and Greece from Scandinavia including on sub-three hour rotations. Delta – currently the neo's biggest operator with 33 -900s in service – has placed its 281-seat, three-class jets on rotations from hubs in Atlanta, Seattle, Cincinnati, Orlando and Minneapolis to cities in Asia, South America, Europe and Africa. Finally, Cebu Pacific has managed to squeeze 459 economy class seats into its A330-900s, which connect Manila with Middle Eastern, South East Asian and Australasian destinations. That four very different airlines can operate the same type in four very different ways is testament to its impressive versatility. But which airlines would be willing to bet big on scaling up their operations or moving into long-haul markets?

West Yorkshire widebodies

Jet2.com has steadily and almost stealthily expanded to become Europe's 13th biggest airline, having transported 16.5m passengers in 2023. It now boasts a fleet of 17 A321s – including the initial 14 of 146 A321neos set to replace its 100 Boeing 737s.

For the past seven years, the Leeds-based leisure airline has upped capacity by leasing in AirTanker A330ceos during the summer season, while this year that contract has been extended to include the winter. The borrowed Brize Norton-based jets having flown between Manchester and Spanish holiday destinations including Palma, Tenerife and Lanzarote. However, the carrier won't have failed to notice long-haul leisure traffic from Manchester is a shadow of its pre-COVID self. Just TUI Airways, Virgin Atlantic, Aer Lingus UK and Singapore Airlines connect the northwest hub to the US,

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BELOW: ***China Eastern received its first A330-200 in February 2006*** AIRBUS/P MASCLET/ MASTER FILMS

with the lattermost set to pull its Houston route at the end of March. What's more, Jet2 is no stranger to the western side of the Atlantic, having flown seasonal routes from Manchester and Newcastle to New York with Boeing 757-200s until 2018.

The carrier's current focus is clearly on expanding its domestic presence, creating bases at Liverpool/John Lennon and Bournemouth last year with London/Luton following shortly. However, there's a strong business case for an A330neo order. Such a purchase would enable Jet2 to capitalise on a lack of options for passengers wanting to fly long-haul from Manchester and other secondary UK cities following the collapses of Monarch and Thomas Cook as well as the hesitancy of United, Delta and American Airlines to reintroduce UK links other than to Edinburgh and London. Additionally, the widebodies would also remove the reliance on AirTanker for boosting seasonal capacity on links to short-haul holiday hotspots, especially should the RAF require its 'surge fleet'.

While the timing might not be quite right at the moment, it would be a logical next step for the carrier that would be able to leverage its position as an airline favoured by travellers. Indeed, the company has recently been buoyed by plaudits such as *Which?'s* Best Airline for Passenger Satisfaction and *Airline Economics'* European Airline of the Year.

Connecting up the dots

For years now, Indigo Partners has been working on what must surely become the world's first truly global low-cost carrier. The US private equity firm has controlling interests in Denver-based Frontier Airlines and Chile's JetSmart as well as holding stakes in Wizz Air and Volaris. Unsurprisingly given their proximity, Frontier and Volaris have a codeshare agreement, while the introduction of A321XLRs with Wizz this March and JetSmart and Volaris set to follow will increase opportunities for networks to connect up.

As each airline has independently demonstrated that it is more than capable of operating profitably, the leveraging of each individual route network to open low-cost connections between existing bases and focus cities is a natural next step for the group.

The move would add transatlantic spokes to already busy domestic and international hubs. Indeed, Gatwick – where Wizz has been establishing a major presence for itself and will soon operate its maiden A321XLR flights from – would be a good fit for the A330neo should demand outstrip the smaller XLR. While the Hungarian carrier has identified Jeddah as its first destination with the longest-legged A321neo variant, linking up with Frontier and Volaris hubs would likely follow suit.

Wizz Air's US counterpart has major bases in Denver, Orlando and Las Vegas while Volaris – Mexico's largest airline – is headquartered at Cancun. These destinations would allow Indigo Partners' carriers to go toe-to-toe with British Airways, Norse UK and TUI Airways while leveraging the combined selling power of two airlines already well established in markets on their respective sides of the Atlantic.

But why plump for the A330neo? As well as the previously mentioned speed with which deliveries could begin, Wizz Air is already familiar with

ABOVE: ***The introduction of the A321LR in May 2019 enabled Air Transat to phase out its remaining A310-300s by the following March*** AIRBUS

BELOW: ***Delta Air Lines is the largest operator of the A330neo with 33 in its fleet*** DELTA AIR LINES

KUWAIT
الكويتية
A330neo

ABOVE: ***Kuwait Airways is the only airline to operate both variants of the A330neo*** AIRBUS/A DOUMENJOU/ MASTER FILMS

the A330, having operated a -200F model for the Hungarian government between October 2020 and December 2024. Equally, all four of the carriers exclusively fly Airbus aircraft and Indigo Partners has previously placed headline-grabbing orders for vast numbers of A320 Family jets, meaning there is potential for a discount should things get as far as the negotiating table.

Freighter

Boeing's ongoing issues – combined with its plans for the next several years – have presented Airbus with a golden opportunity. The US manufacturer has stated it is to end 767-300F production in 2027 and there is no sign of a 787 'Dreamfreighter' on the horizon.

Airbus has previously dabbled with dedicated freighters, but has found the market tough. Just 38 A330-200Fs have been produced since 2012, although the -200 and -300 variants have become popular as passenger-to-freighter (P2F) conversions.

An A330neo dedicated freighter programme, if launched, could steal a march on Boeing and beat the US airframer to the punch. Airbus has demonstrated it is more than willing to continue developing the type, having launched the A330-800-based A330 MRTT+ at last year's Farnborough Airshow, advising that air arms would be able to take delivery of the neo tanker/transport before the end of the decade.

Whether the A330neo can continue on its bullish sales run or not remains to be seen. However, the aviation industry's current state, coupled with ongoing geopolitical challenges that will factor in Boeing sales, mean the A330neo has plenty going for it when compared with other in-production twin-aisle jets. What is abundantly clear is that the second-generation A330 will have a far more diverse customer base – incorporating legacy carriers, leisure airlines, low-cost operators and boutique airlines – than its predecessor. **AW**

Jet2.com
ndly Low Fares
Jet2
G-VYGL

BELOW: ***Through a wet lease with AirTanker, UK-based leisure carrier Jet2.com has bumped up its summer capacity using A330ceos*** AIRTEAMIMAGES.COM/ ENDA BURKE

WIZZ
wizzair.com

Could Wizz Air or another of Indigo Partners' airlines be in line to buy A330neos? AVIATION IMAGE NETWORK/BAOLUO

THE FINAL FRONTIER

Take-off, one of the most critical phases of flight, has traditionally been the domain of pilots. **Edward Paine** examines a new technology from Embraer which seeks to introduce the autopilot to the process

ABOVE: ***Embraer's E2TS is designed to automate the take-off procedure to optimise performance, enhance safety, and reduce pilot workload*** EMBRAER

Automation plays a role in virtually every aspect of modern aviation, from the cruise to the landing, but the moment when an aircraft leaves the ground has remained firmly under human control. That is, until now. Embraer's Enhanced Take Off System (E2TS) represents a pivotal step towards changing this dynamic, promising to optimise performance, enhance safety, and reduce pilot workload without altering the essence of the take-off process. Fundamentally, Embraer said the technology aims to make the lift-off manoeuvre "precise and consistent" by enabling the autopilot to be engaged on the ground.

The E2TS system, introduced on the Brazilian airframer's E2 jets, marks the first application of software that could eventually be adapted for any aircraft. Embedded within the aircraft's fly-by-wire architecture, E2TS operates via three flight control computers and leverages data from four smart probes to execute precise take-off manoeuvres with the autopilot engaged.

Safety remains the cornerstone of the system's design. By automating the critical rotation phase – the moment the aircraft transitions from ground roll to flight – E2TS provides a level of precision that cannot be precisely and reliably replicated by human pilots, Embraer said. The system consistently rotates the aircraft at the exact speed required, minimising deviations and ensuring optimal performance even in challenging conditions such as crosswinds or after an engine failure. "The system will rotate the aeroplane to the perfect pitch when you lose an engine," said Luís Carlos Affonso, Embraer's senior vice president of engineering and technology development. "It is more precise than the pilot, so it will extract the maximum performance of the aeroplane in a one-engine-inoperative scenario."

In this failure scenario, for instance, the system adjusts to achieve the perfect pitch angle, a task that typically demands extensive pilot training. "It reduces pilot workload," said Patrice London Guedes, who has been working as the technical lead on the E2TS project since its inception. "The system has a high accuracy. E2TS will always rotate the aircraft at the same rotation speed with very few deviations. Therefore, the system is more precise and consistent than a human pilot."

Simulations that have been carried out by Embraer have demonstrated the system's robustness under various demanding conditions, including crosswinds of up to 30kts. The manufacturer said the tests confirm that E2TS not only enhances safety but also provides a smoother and more consistent take-off experience.

Unlike some emerging aviation technologies, E2TS is not reliant on artificial intelligence (AI). According to Embraer, the absence of AI simplifies the certification process, as current regulations lack frameworks for certifying AI-based systems. Instead, the system relies on rigorously developed control laws – a fixed set of rules optimised through thousands of simulated take-offs to ensure consistent, high-precision performance. "E2TS is not an autonomous system," Affonso

BELOW: ***The system only requires a software update to be rolled out on E2 aircraft*** ANDREAS SPAETH

E195-E2
EMBRAER
E2
E190-E2
E2
E175-E2

ABOVE: ***E2TS is only available on Embraer's E2 family of aircraft*** EMBRAER

explained. “The same way you have an autopilot in the aeroplane, and even an auto landing, Embraer is now introducing the auto take-off. It is an autopilot system, although it is not autonomous.”

E2TS is designed to deliver more than just safety benefits – it also enhances operational efficiency. The system's precise control allows it to optimise take-off performance, especially for longer aircraft operating on short runways. “With E2TS, there is a pitch limitation in order to avoid a tail strike. However, as soon as the aircraft gets away from the ground, it is possible to use a higher pitch angle,” noted Guedes.

By incrementally increasing the pitch angle once airborne, E2TS reduces the distance needed to reach the required screen height – the height that an aircraft must achieve after take-off, equating to 35ft on a dry runway, which is used as a measure of aircraft performance for certification purposes. This capability opens up several possibilities for operators: increased payloads, extended range, or thrust reduction (reduced engine stress during take-off can lower fuel consumption and maintenance costs). “This system will increase pitch in a continuous way,” »

BELOW: ***The system was announced at the 2024 Farnborough Airshow*** KEY-THOMAS HAYNES

E2
PROFIT HUNTER
E195-E2

ABOVE: ***The capability of the system is particularly focused on performance-limited airports such as London/City, Florence and Rio de Janeiro's Santos Dumont*** LONDON CITY AIRPORT/ANDREW BAKER

continued Guedes. "Therefore, the aircraft will reach the screen height earlier compared to the conventional take-off performance by a human pilot. It is then possible to convert this take-off distance decrease to a take-off weight increase. This allows a higher range for the same payloads, or a higher payload for the same route, or even just a thrust reduction."

With these benefits, E2TS has been positioned as a valuable tool for airlines seeking to maximise operational flexibility and cost efficiency out of restricted airports. Operators at performance-limited hubs such as London/City, Florence and Rio de Janeiro's Santos Dumont in Embraer's home nation are likely to see the most benefit from the E2TS. Embraer said the system can add another 400 miles range for equipped aircraft, stretching the destination map for an E2 aircraft operating out of London/City as far as Istanbul and North Africa.

Another significant advantage of E2TS is that it can be retrofitted. Embraer has ensured that existing E2 aircraft can adopt the technology with minimal disruption. Implementation requires only a software update, and pilots need just half a day of ground school training to familiarise themselves with the system. Importantly, E2TS does not require changes to standard operating procedures (SOPs), maintaining a sense of familiarity for flight crews. "The SOPs are absolutely the same, the call outs are the same, in fact the only thing you have to do is focus on not rotating the aeroplane, to allow the aeroplane to rotate itself, because if you rotate it, the system will disengage," noted Affonso, who was involved in flight testing the system.

Explaining the procedure for the flight crew, he continued: "You advance the throttles and after a certain TLA [thrust lever angle], the autothrottle will take control. You make exactly the same call outs. The pilot monitoring says 'speed alive', '80 knots', 'V1', and then you take your hands off the throttle, put the two hands on the yoke, and then the pilot monitoring will say, 'rotate'. But you do not rotate – that's the only difference. The pilots keep their hands on the yoke, and when they say rotate, the autopilot is already engaged, so the autopilot will rotate for you. What is the cue for the pilots? You see the aeroplane rotating, you see the pitch moving through the artificial horizon on the PFD and then the pilot monitoring will say 'positive rate', and the pilot flying will say, 'gear up'. There are only two differences – the pilot must select the system to be turned on through the MCDU (the Multi-Function Control and Display Unit, a keyboard and display interface that pilots use to manage an aircraft's flight plans and other functions), and the pilot must only monitor the rotation."

Certification for E2TS is already underway. Brazil's National Civil Aviation Agency (ENAC) approved the system's certification plan in January 2024, and Embraer is working closely with the European Union Aviation Safety Agency (EASA) and the US Federal Aviation Administration (FAA) to secure global approval.

Airbus' alternative

European manufacturer Airbus has also been working on similar technology since 2018, dubbed the Autonomous Taxi, Take-Off & Landing (ATTOL) project. Under this programme, automatic take-off is enabled by image recognition technology installed directly on the aircraft, rather than relying on an Instrument Landing System (ILS), the existing ground equipment technology currently installed at most airports around the world. In

helvetic
airways
HB-AZH

BELOW: ***Zurich-based Helvetic Airways operates the E190-E2 into London/City*** VIIMAGES.COM/TYLER SU

PROFIT
E195-E2

ABOVE: ***Unlike some emerging aviation technologies, E2TS is not reliant on artificial intelligence*** EMBRAER

RIGHT: ***The capability opens up several possibilities for operators including thrust reduction for reduced engine stress during take-off which can lower fuel consumption and maintenance costs*** EMBRAER

2020, at the European manufacturer's Toulouse headquarters, the company performed a fully automatic vision-based take-off using an Airbus A350-1000 test aircraft. The crew conducted a total of eight take-offs over a period of four-and-a-half hours.

"The aircraft performed as expected during these milestone tests. While completing alignment on the runway, waiting for clearance from air traffic control, we engaged the autopilot," said Airbus test pilot Captain Yann Beaufils. "We moved the thrust levers to the take-off setting and we monitored the aircraft. It started to move and accelerate automatically, maintaining the runway centre line, at the exact rotation speed as entered in the system. The nose of the aircraft began to lift up automatically to take the expected take-off pitch value and a few seconds later we were airborne."

Addressing concerns that the industry is positioning the technology as an enabler of single-pilot operations, Airbus has stressed that its mission is "not to move ahead with autonomy as a target in itself, but instead to explore autonomous technologies alongside other innovations in areas such as materials, electrification and connectivity". But the company added: "By doing so, Airbus is able to analyse the potential of these technologies in addressing the key industrial challenges of tomorrow, including improving air traffic management, addressing pilot shortages and enhancing future operations. At the same time Airbus is leveraging these opportunities to further improve aircraft safety while ensuring today's unprecedented levels are maintained."

Indeed, while Embraer's E2TS offers clear advantages, its introduction raises similar questions about the evolving role of automation in aviation. By taking over a critical aspect of flight traditionally handled by pilots, the system challenges the industry to reconsider the balance between human expertise and technological innovation. Some sceptics may question whether automation in take-off could erode pilot skills over time. However, Embraer emphasised that E2TS is designed to complement, not replace, pilot capabilities. The system provides a fail-safe option, allowing pilots to intervene and take control if needed. Moreover, the absence of AI ensures technology is predictable, transparent, and adheres to established safety standards.

Pricing for E2TS has yet to be finalised, but its potential benefits make it an attractive proposition for airlines. By improving safety and efficiency, the system could yield long-term savings through reduced training costs, optimised fuel usage, and enhanced aircraft performance. E2TS represents a significant milestone in aviation technology, marking the first step toward automating take-off while maintaining high standards of safety and reliability. As the system undergoes additional testing and certification, the industry will watch closely to see how E2TS shapes the future of flight operations. With its focus on safety, efficiency, and adaptability, Embraer's Enhanced Take Off System is poised to transform the take-off experience. AW

BELOW: ***Certification for E2TS is already underway with Brazil's ENAC approving the system's certification plan in January 2024, and Embraer is working closely with EASA and the FAA to secure global approval*** KEY-THOMAS HAYNES

Airliner Deliveries

The latest commercial aircraft deliveries from manufacturers and lessors

Bucharest-based Animawings received Airbus A220-300, YR-CHR (c/n 55316) on December 12, the first of two of the type delivered that month from Airbus Canada in Montreal. It's configured in a two-class layout with 12 business and 125 economy seats
AIRTEAMIMAGES.COM/ LOREDANA CIOCLEI

AnimaWings
The Heart of Romania
YR-

Oman Air [WY/OMA 'Oman Air']

G-HAGI	B737-8	42828	ex 9H-ERI, dd 13.01.25 & entered service 15.01.25, lsd fr/ op by Ascend Airways
G-WEAH	B737-8	43340	ex TC-MKF, dd 29.12.24 & entered service 31.12.24, lsd fr/ op by Ascend Airways

Air Arabia [G9/ABY 'Arabia']

A6-AQQ	A320-214	6072	ex VP-CEK, dd 30.01.25 Shannon – Sharjah, lsd fr SMBC Aviation Capital, seen Shannon 10.01.25 prior to lease

Emirates [EK/UAE 'Emirates']

A6-EXB	A350-941	690	ex F-WZFN, ff 12.11.24, dd 31.12.24

Etihad Airways [EY/ETD 'Etihad']

EC-NCK	A330-243	840	ex OE-IBQ, dd 13.01.25 Madrid – Abu Dhabi, entered service 15.01.25, lsd fr/ op by Wamos Air

Qatar Airways [QR/QTR 'Qatari']

A7-BHS	B787-9	64229	ff 06.12.24, dd 20.12.24
A7-BUA	B787-8	42378	ex A4O-SA, dd 08.01.25 Dublin – Doha, lsd fr Oman Air

9 Air [AQ/DYH 'Trans Jade']

B-206L	B737-8	61374	ex N253BE, N1786B, ff 28.02.19, dd 31.12.24

Air Changan [9H/CGN 'Chang An']

B-5686	B737-84P	38156	dd 06.01.25 Haikou – Xi'An

Air China [CA/CCA 'Air China']

B-225Z	B737-8	60942	ex N231BE, N57002, N5573P, N5515X, N4025T, N4022T, ff 14.05.22, dd 27.12.24

Air China Cargo [CA/CAO 'Airchina Freight']

B-6093	A330-243(F)	884	ex F-WWKO, dd 26.01.25

China Eastern Airlines [MU/CES 'China Eastern']

B-32KC	A321-251nx	12230	ex F-WWSV, ff 06.12.24, dd 23.12.24
B-32KD	A321-251nx	12318	ex D-AZYB, ff 25.10.24, dd 05.12.24
B-32KE	A320-251n	12361	ex D-AUBY, ff20.12.24, dd 30.12.24
B-32KG	A320-251n	12249	ex B-000R, ff 14.11.24, dd 03.12.24
B-32KH	A320-251n	12275	ex B-000T, ff 20.11.24, dd 13.12.24
B-32KM	A320-251n	12309	ex B-000V, ff 09.12.24, dd 26.12.24
B-32KN	A320-251n	12350	ex B-007C, ff 10.12.24, dd 30.12.24
B-32LF	A320-251n	12352	ex D-AUAD, ff 24.12.24, dd 30.12.24
B-656Y	ARJ21-700	10143	ex B-001S, ff 17.01.24, dd 03.01.25
B-656Z	ARJ21-700	10145	ex B-001W, ff 20.04.24, dd 03.01.25

China Express Airlines [G5/HXA 'China Express']

B-657W	ARJ21-700	10170	ex B-099K, ff 10.12.24, dd 03.01.25

China Southern Airlines [CZ/CSN 'China Southern']

B-32JJ	A319-153n	12267	ex D-AWVL, ff 20.11.24, dd 23.12.24
B-32JY	A319-153n	12195	ex D-AVWB, ff 18.12.24, dd 31.12.24
B-32JZ	A321-253nx	12270	ex B-000S, ff 13.11.24, dd 02.12.24
B-32J6	A320-251n	12299	ex F-WWDM, ff 19.10.24, dd 02.12.24
B-32K0	A321-251nx	12281	ex B-000U, ff 29.11.24, dd 10.12.24
B-32K2	A321-253nx	12322	ex D-AVYV, ff 20.12.24, dd 30.12.24

China United Airlines [KN/CUA 'Lianhang']

B-5549	B737-86N	37888	ex N1796B, dd 08.01.25 Kunming – Beijing PKX, lsd fr Maverick Aviation

Hainan Airlines [HU/CHH 'Hainan']

B-20E6	B737-8JP	41125	ex N475DM, dd 22.01.25 Jinan – Haikou, lsd fr China Aircraft Leasing Group
B-32H5	A320-251n	12167	ex F-WWTS, ff 21.11.24, dd 03.12.24, lsd fr CMB Financial Leasing
B-32H6	A320-251n	12263	ex F-WWDK, ff 23.11.24, dd 06.12.24, lsd fr CDB Leasing
B-32H7	A320-251n	12271	ex F-WWDQ, ff 28.11.24, dd 16.12.24, lsd fr CDB Leasing
B-32K5	A320-251n	12347	ex F-WWBB, ff 13.12.24, dd 24.12.24, lsd fr CMB Financial Leasing
B-32K6	A320-251n	12362	ex F-WWBQ, ff 13.12.24, dd 29.12.24, lsd fr CMB Financial Leasing

JD Airlines [JG/JDL 'Jingdong']

B-226T	B737-81B(BCF)	30709	ex N3070, dd 06.01.25 Jinan – Tianjin, lsd fr AerCap

Juneyao Airlines [HO/DKH 'Air Juneyao']

B-32JU	A320-271n	12310	ex B-000W, ff 02.12.24, dd 19.12.24

Ruili Airlines [DR/RLH 'Sendi']

B-5731	B737-89P	40951	dd 18.01.25 Jinan – Kunming, lsd fr Avolon Aerospace, in special 'Bosideng' colours

Shanghai Airlines [FM/CSH 'Shanghai Air']

B-220K	B787-9	63720	ff 15.09.21, dd 27.12.24 to China Eastern Airlines in Shanghai colours

Shenzhen Airlines [ZH/CSZ 'Shenzhen Air']

B-20DZ	B737-8	61151	ex N235BE, N5573L, N231BE, N1786B, ff 22.12.19, dd 30.12.24

Sichuan Airlines [3U/CSC 'Sichuan']

B-32KL	A320-271n	12386	ex F-WWBO, ff 14.12.24, dd 30.12.24, lsd fr China Aircraft Leasing Group
B-32K8	A320-271n	12212	ex F-WWDY, ff 16.12.24, dd 26.12.24, lsd fr AerCap

Spring Airlines [9S/CQH 'Air Spring']

B-32JT	A320-251n	12434	ex B-000K, ff 22.10.24, dd 06.12.24

Cathay Pacific Airways [CX/CPA 'Cathay']

B-HPS	A321-251nx	12251	ex D-AZYL, ff 12.12.24, dd 19.12.24 to Cathay Pacific Aircraft Services Ltd

HK Express [UO/HKE 'Hongkong Shuttle']

B-KKM	A321-251nx	12147	ex F-WWSS, ff 28.11.24, dd 13.12.24 to Cathay Pacific Aircraft Services Ltd

Starlux Airlines [JX/SJX 'Starwalker']

B-58507	A350-941	698	ex F-WZGZ, ff 20.11.24, dd 12.12.24
B-58508	A350-941	705	ex F-WZHK, ff 25.11.24, dd 17.12.24

Air Creebec [YN/CRQ 'Cree']

C-GOND	DHC-8 102(PF)	90	reg'd 10.01.25

Black Moose Outposts

C-FJBM	Cessna 208B/EX	208B5295	ex N169WB, reg'd 30.01.25

Chrono Aviation [MB/MBK 'Matblack']

C-FETB	DHC-8 106	228	reg'd 30.01.25 to Chrono Jet Inc, was canx 01.04.24

Kenn Borek Air [4K/KBA 'Borek Air']

C-FZDQ	DHC-6 300	347	ex PJ-DVG, reg'd 13.01.25

Lake Country Airways (1000771101 Ontario Inc)

C-FYRR	DHC-2 Mk.I	1178	ex N481G, reg'd 08.01.25

Voyageur Airways [VC/VAL 'Voyageur']

C-GKON	DHC-8 102	130	ret fr Wasaya Airways lease, restored 14.01.25

JetSMART [JA/JAT 'Rocksmart']

CC-DIQ	A321-271nx	12244	ex D-AVZG, ff 09.12.24, dd 19.12.24 & reg'd same day to Avismart Leasing II Ltd, named 'Gaviotin Elegante'
CC-DIR	A320-271n	12283	ex F-WZMV, ff 12.12.24, dd 23.12.24, lsd fr BOC Aviation & reg'd same day, named 'Ciervo de los Pantanos'

LATAM Airlines Chile [LA/LAN 'Lan']

CC-BHI	A320-271n	12237	ex F-WWTK, ff 29.11.24, dd 13.12.24, lsd fr BOC Aviation & reg'd same day

SKY Airline [H2/SKU 'Sky Airline']

CC-DBN	A320-251n	12319	ex F-WWBG, ff 25.11.24, dd 10.12.24, lsd fr SMBC Aviation Capital & reg'd same day
CC-DBO	A320-251n	12320	ex F-WWDV, ff 20.12.24, dd 30.12.24, lsd fr SMBC Aviation Capital & reg'd same day
CC-DBP	A320-251n	12344	ex F-WWDA, ff 07.12.24, dd 19.12.24, lsd fr SMBC Aviation Capital & reg'd same day

Air Arabia Maroc [3O/MAC 'Arabia Maroc']

LZ-EAH	A320-214	2930	ex N293CL, dd 16.01.25 Varna – Brussels, lsd fr/op by Electra Airways

Royal Air Maroc [AT/RAM 'Royalair Maroc']

CN-RHB	B787-9	64981	ex N2004T, ff 27.08.21, dd 27.12.24

Condor [DE/CFG 'Condor']

D-ANRQ	A330-941	2079	ex F-WWCS, ff 09.12.24, dd 30.12.24 to NAS Aviation Services, lsd fr AerCap, 'Beige' stripes

Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	colours
cn	manufacturer's construction/serial number
cnvrtd	converted
dbf	destroyed by fire
dbr	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	sold to
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed

We welcome any feedback on this listing

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

Lufthansa [LH/DLH 'Lufthansa']

D-AIXY	A350-941	692	ex F-WZGF, ff 07.11.24, dd 23.12.24, named 'Fürth'
D-AIXZ	A350-941	706	ex F-WZHG, ff 02.12.24, dd 30.12.24, named 'Solingen'

Lufthansa City Airlines [VL/LHX 'Cityair']

D-AIJN	A320-271n	11672	ex F-WWTO, dd 02.01.25 Munich – Münster for work, ret to Munich 08.01.25 & entered service 09.01.25

Binter Canarias [NT/IBB 'Binter']

EC-OJK	ERJ190-400	19020167	ex PR-EIF, dd 03.01.25, named 'Murcia'
EC-OLZ	ERJ190-400	19020170	ex PR-EIJ, dd 08.01.25, named 'Pamplona'

Swiftair [WT/SWT 'Swift']

EC-JRP	ATR 72-212(F)	446	ex G-CLXT, dd 15.01.25

Aer Lingus [EI/EIN 'Shamrock']

EI-XLR	A321-253ny	11348	ex D-AZXY, ff 04.07.24, dd 18.12.24 & reg'd same day, named 'St Lelia / Liadhain'
EI-XLT	A321-253ny	11590	ex D-AYAH, ff 05.12.24, dd 18.12.24 & reg'd same day, named 'St Mella / Mella'

ASL Airlines Ireland [AG/ABR 'Contract']

EI-HRF	B737-86J(BCF)	30879	ex VP-CII, reg'd 23.01.25, lsd fr Icelease & op for SoltiAir

Armenia Airways [6A/AMW 'Armenia']

EK73750	B737-33A(F)	27459	ex A9C-APC, dd 14.01.25, lsd fr K2 Aviation partners

Toos Airlines [IRT 'Toos Air']

EP-MFA	B737-5Q8	27629	ex EW-290PA, dd 03.01.25 Minsk – Tehran IKA

Varesh Airlines [VRH 'Sky Victor']

EP-LEF	B737-33V	29338	ex T7-MSR, dd 08.01.25, entered service 19.01.25

FLYONE [5F/FIA 'Fia Airlines']

9H-SAS	B737-8BK	33029	ex UR-SQP, dd 12.01.25 & entered service 13.01.25, lsd fr/op by SkyUp Europe

Ethiopian Airlines [ET/ETH 'Ethiopian']

ET-BAX	A350-1041	702	ex F-WZFL, ff 19.11.24, dd 06.12.24
ET-BAY	A350-1041	710	ex F-WZNA, ff 16.12.24, dd 31.12.24
ET-BBG	B777-300ER	65420	ex N874BC, N874BA, N5511Y, ff 21.01.20, dd 10.12.24, lsd fr Altavair AirFinance

New Way Cargo Airlines [NWY 'New Way Cargo']

EX-76026	Il-76TD	1033417545	ex UK-76377, dd 25.01.25

Corsair [SS/CRL 'Corsair']

F-HTEK	A330-941	2075	ex F-WWCE, ff 12.02.24, dd 24.12.24 to NAS Aviation Services (AerCap) & reg'd to Auxerre Location S.A.S 30.12.24

Transavia France [TO/TVF 'French Soleil']

F-HXSE	A320-252n	12284	ex F-WWTN, ff 04.12.24, dd 23.12.24, lsd fr AerCap & reg'd to AerCap Ireland Ltd 02.01.25

Air Caraïbes Atlantique [CAJ 'Car Line']

F-HAJP	A350-1041	600	ex F-WZFF, ff 10.11.22, dd 12.12.24 & reg'd to Airinvest 12 same day

easyJet Airline [U2/EXY 'Easy']

G-UZED	A320-251n	12193	ex D-AUBW, ff 17.12.24, dd 23.12.24 & reg'd same day
G-UZEE	A320-251n	12357	ex F-WWIN, ff 06.12.24, dd 18.12.24 & reg'd same day

Jet2.com [LS/EXS 'Channex']

G-HLYI	A321-251nx	12161	ex D-AVYB, ff 29.11.24, dd 11.12.24, lsd fr ICBC Leasing & reg'd same day to Jet2.com
G-SUNM	A321-251nx	12127	ex D-AZWQ, ff 30.11.24, dd 06.12.24 & reg'd same day, named 'Jet2 Athens'

Maersk Air Cargo UK [MUK]

G-MACZ	B767-25E(F)	27195	ex OY-SRJ, reg'd 15.01.25, seen Shannon 10.01.25 prior to delivery still Star Air in colours, ferried Shannon – East Midlands 21.01.25

TUI Airways [BY/TOM 'Tomjet']

G-TUOB	B737-8	44636	ex N4022T, ff 22.11.24, dd 17.12.24 & reg'd same day, named 'Geneva'

Virgin Atlantic Airways [VS/VIR 'Virgin']

G-VPIE	A330-941	2077	ex F-WWCL, ff 09.12.24, dd 20.12.24 & reg'd same day, lsd fr Air Lease Corp, named 'Cherry Bakewell'

Hungary Airlines [HUA]

HA-LHU	A330-243F	1578	ex A7-AFF, dd 23.12.24, op for Hungarian Government

Wizz Air [W6/WZZ 'Wizz Air']

HA-LGQ	A321-271nx	12196	ex D-AVXU, ff 07.12.24, dd 16.12.24 & reg'd same day to Huoguo Ltd
HA-LGR	A321-271nx	12219	ex D-AZXA, ff 15.11.24, dd 03.12.24 & reg'd same day to JPA No.272 Co Ltd
LZ-FSJ	A320-233	3507	ex 2-VSLJ, dd 02.01.25 & entered service same day, lsd fr/op by Fly2Sky

Asiana Airlines [OZ/AAR 'Asiana']

HL8586	A321-251nx	12340	ex D-AVYI, ff 06.12.24, dd 18.12.24 & reg'd same day

Korean Air [KE/KAL 'Korean']

HL8537	B787-10	60302	ff 03.06.24, dd 05.12.24 & reg'd same day
HL8590	A321-272nx	12111	ex F-WWSP, ff 16.11.24, dd 09.12.24 & reg'd same day
HL8591	A321-272nx	12134	ex F-WWSR, ff 26.11.24, dd 17.12.24 & reg'd same day
HL8597	A350-941	681	ex F-WZFU, ff 04.12.24, dd 30.12.24 & reg'd same day, ferried Toulouse – Pusan 30-31.12.24 all white
HL8598	A350-941	689	ex F-WZNE, ff 04.12.24, dd 27.12.24 & reg'd same day

T'Way Air [TW/TWB 'Tway Air']

HL8706	B777-367ER	41430	ex B-KQK, reg'd 09.12.24, lsd fr Babcock & Brown, ferried Busan – Seoul GMP 24.01.25 for entry into service

Copa Airlines [CM/CMP 'Copa']

HP-9803CMP	B737-8	62705	ex N4022T, ff 17.11.24, dd 26.12.24

Riyadh Air [RX/RXI 'Riyadh Air']

HZ-RXX	B787-9	38892	ex A4O-SD, dd 13.01.25 Abu Dhabi – Riyadh, lsd fr Oman Air

Saudia [SV/SVA 'Saudi']

HZ-ASAJ	A321-251nx	12370	ex D-AVYS, ff 19.12.24, dd 28.12.24
HZ-ASAL	A321-251nx	12136	ex D-AVXJ, ff 06.12.24, dd 16.12.24

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Jet2.com took delivery of Airbus A321-251NX, G-SUNM (c/n 12127) on December 11, and is one of 13 examples of the all economy 232-seat type in the fleet AIRTEAMIMAGES.COM/ ENDA BURKE

Airliner Deliveries

The latest commercial aircraft deliveries from manufacturers and lessors

Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	colours
cn	manufacturer's construction/serial number
cnvrtd	converted
dbf	destroyed by fire
dbr	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	sold to
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed

Aeroitalia [XZ/AEZ 'Aeroitalia']

SX-ASK	ERJ170-200STD	17000330	ex OE-IZZ, dd 03.01.25 & entered service 05.01.24, lsd fr/op by Marathon Airlines

ITA Airways [AZ/ITY 'Itarrow']

EI-HHT	A220-300	55317	ex C-FOWY, ff 03.12.24, dd 11.12.24, lsd fr Air Lease Corp & reg'd to ALC Clover Ireland Ltd sane day, named 'Angelo Di Livio'
EI-MVF	A220-100	50082	ex C-FOVD, ff 13.12.24, dd 20.12.24 & reg'd to Aurora Financing 3 DAC same day

Japan Airlines [JL/JAL 'Japanair']

JA08WJ	A350-1041	683	ex F-WZFZ, ff 24.10.24, dd 04.12.24 & reg'd 05.12.24

Royal Jordanian [RJ/RJA 'Jordanian']

JY-REZ	ERJ190-300	19020013	ex EI-KHB, dd 14.01.25, lsd fr Azorra Aviation

Norse Atlantic Airways [N0/NBT 'Longship']

LN-FNE	B787-9	38789	ex G-CKWD, reg'd 26.01.25 to Wilmington Trust SP Services (Dublin) Ltd, lsd fr AerCap, ferried Gatwick – Oslo 29.01.25 for entry into service

Widerøe [WF/WIF 'Wideroe']

LN-WDU	DHC-8 402	4313	ex C-FGFI, reg'd 15.01.25 to Widerøe Asset AS, ferried Calgary – Sandefjord as C-FGFI 05-06.07.25 & reg'n canx 14.01.25

JetSMART Argentina [WJ/JES 'Smartbird']

CC-AWN	A320-271n	9463	ex F-WWBM, dd 14.01.25, lsd fr China Aircraft Leasing Group

Bulgaria Air [FB/LZB 'Flying Bulgaria']

LZ-VIE	A220-100	50081	ex C-FOYA, ff 06.12.24, dd 16.12.24, lsd fr Air Lease Corp

Compass Cargo Airlines [HQ/ADZ 'Migrator']

LZ-CJB	B747-428ERF	32866	ex TC-ACR, dd 14.01.25 Istanbul IST – Sofia, lsd fr AerCap
LZ-CJC	B747-428ERF	32867	ex TC-ACM, dd 16.01.25 Istanbul IST – Sofia, lsd fr AerCap

GP Aviation [IV/GPX 'Ivory']

LZ-CRI	B737-446	28832	ex N7379C, dd 30.01.25 Craiova – Pristina, lsd fr Votan Aero

21 Air [2I/CSB 'Cargo South']

N1997A	B767-33AER(F)	27310	ex N648GT, dd 14.01.25, lsd fr Amazon.com Services, op for Amazon Prime Air

Aero-Flite Aerial Firefighting [AGY 'Flightgroup']

N947AC	DHC-8 402 AT	4129	ex C-FFOZ, reg'd 23.01.25 to Bank of Utah Trustee, tanker # '184'
N993AC	DHC-8 402 AT	4257	ex C-FFZP, reg'd 24.01.25 to Bank of Utah Trustee, tanker # '183'

Allegiant Air [G9/AAY 'Allegiant']

N812NV	B737-8200	68003	ex N4022T, ff 01.05.24, dd 23.12.24 & reg'd 21.01.25 to Sunrise Asset Management LLC

American Airlines [AA/AAL 'American']

N315UA	B737-8	44508	ex N4022T, ff 22.11.24, dd 23.12.24 & reg'd same day, fleet # '3UA'
N357TY	B737-8	44505	ex N4022T, ff 08.09.24, dd 20.12.24 & reg'd same day, fleet # '3TY'
N472AN	A321-253nx	12282	ex F-WZMY, ff 11.12.24, dd 19.12.24 & reg'd 08.01.25, fleet # '472'

Bering Air [8E/BRG 'Bering Air']

N701BA	Cessna 408	408-0036	reg'd 14.01.25
N703BA	Cessna 408	408-0039	ff 11.12.24, dd 17.01.25, ferried Beech Field – Evanstown 18.01.25

Breeze Airways [MX/MXY 'Moxy']

N244BZ	A220-300	55318	ex C-GPVE, ff 13.11.24, dd 10.12.24 & reg'd 13.12.24 to Breeze Aviation Group

Delta Air Lines [DL/DAL 'Delta']

N433DX	A330-941	2082	ex F-WWYS, ff 12.12.24, dd 30.12.24 & reg'd same day, fleet # '3433'
N587DT	A321-271nx	12109	ex D-AZYQ, ff 02.12.24, dd 17.12.24 & reg'd same day, fleet # '5087'

FedEx Express [FX/FDX 'Fedex']

N254FE	B767-300F	67539	ff 16.11.24, dd 10.12.24 & reg'd 30.12.24, named 'Weston'

Frontier Airlines [F9/FFT 'Frontier Flight']

N657FR	A321-271nx	12276	ex F-WZMR, ff 12.11.24, dd 03.12.24 & reg'd same day to Bank of Utah Trustee, named 'Davis the Mexican Spotted Owl'
N658FR	A321-271nx	12216	ex F-WZMI, ff 10.12.24, dd 19.12.24 & reg'd 26.12.24 to Bank of Utah Trustee, named 'Brazos the Ridgway's Hawk'
N662FR	A321-271nx	12297	ex F-WZMB, ff 14.12.24, dd 23.12.24 & reg'd same day to Bank of Utah Trustee, named 'Martillo the Bonnethead Shark'

GlobalX [G6/GXA 'Gemini']

OO-TUK	B737-86J	36119	ex EI-UNK, dd 22.01.25 & entered service 25.01.25, lsd fr/op by TUIfly Belgium
OO-TUV	B737-86J	36883	ex EI-UNJ, dd 20.01.25 & entered service 24.01.25, lsd fr/op by TUIfly Belgium

Hawaiian Airlines [HA/HAL 'Hawaiian']

N5879K	A330-343(F)	1226	ex A6-AFE, dd 02.01.25, lsd fr Amazon.com Services, op for Amazon Prime Air, ferried Guangzhou – Honolulu 04.01.25 & parked, named 'Sky Voyager'

jetBlue Airways [B6/JBU 'Jetblue']

N2193J	A321-271nx	12274	ex D-AZXB, ff 15.11.24, dd 05.12.24 & reg'd 13.12.24, named 'StateMint Piece'
N3244J	A220-300	55320	ex C-GPVF, ff 04.12.24, dd 30.12.24 & reg'd same day
N3247J	A220-300	55322	ex C-GPYG, ff 15.11.24, dd 09.12.24 & reg'd 10.12.24, named 'We Bluelong Together'

Kalitta Air [K4/CKS 'Connie']

N794CK	B777-F1H	35609	ex A6-EFI, dd 31.12.24, ferried Dubai – Oscoda 04.01.25 & entered service 14.01.25

PSA Airlines (American Eagle) [OH/JIA 'Blue Streak']

N636NN	CRJ.900LR	15399	ex EI-FPB, reg'd 24.01.25 to American Airlines

SkyWest Charter [CW/SCW 'Charter West']

N917SW	CRJ.200LR	7641	ex C-FMMX, dd 12.01.25 Johnston – Oklahoma City

Southwest Airlines [WN/SWA 'Southwest']

N8925Q	B737-8	42597	ff 30.03.24, dd 18.12.24 & reg'd same day
N8934Q	B737-8	68458	ex N4022T, ff 06.11.24, dd 05.12.24 & reg'd same day

Spirit Airlines [NK/NKS 'Spirit Wings']

N739NK	A321-271nx	12324	ex D-AVZB, ff 14.12.24, dd 19.12.24 & reg'd 20.12.24 to Bank of Utah Trustee, lsd fr Jackson Square Aviation, fleet # '6739'

Sun Country Airlines [SY/SCX 'Sun Country']

N5237A	B737-84P(BCF)	32608	ex N218RH, dd 14.01.25, lsd fr Amazon.com Services, op for Amazon Prime Air

United Airlines [UA/UAL 'United']

N14524	A321-271nx	12061	ex F-WWSL, ff 17.12.24, dd 27.12.24 & reg'd 31.12.24, fleet # '4524'
N14527	A321-271nx	12056	ex F-WZMT, ff 11.12.24, dd 19.12.24 & reg'd 20.12.24, fleet # '4527'
N14529	A321-271nx	12120	ex D-AZYU, ff 28.11.24, dd 06.12.24 & reg'd same day, fleet # '4529'
N14530	A321-271nx	12218	ex F-WZMS, ff 18.12.24, dd 30.12.24 & reg'd same day, fleet # '4530'
N24990	B787-9	38276	ff 26.11.24, dd 12.12.24 & reg'd same day, fleet # '4990'
N27586	B737-9	67739	ex N4025T, N4022T, ff 16.10.24, dd 09.12.24 & reg'd same day, fleet # '7586'
N29989	B787-9	38274	ff 11.11.24, dd 04.12.24 & reg'd 06.12.24
N77585	B737-9	68826	ex N4022L, N4022T, ff 11.09.24, dd 16.12.24 & reg'd 13.12.24 to Bank of Utah Trustee, fleet # '7585'

Finnair [AY/FIN 'Finnair']

OH-LWT	A350-941	708	ex F-WZFM, ff 19.11.24, dd 17.12.24

KLM Royal Dutch Airlines [KL/KLM 'Klm']

PH-AXC	A321-252nx	12238	ex D-AVXG, ff 28.11.24, dd 10.12.24 & reg'd same day, lsd fr CDB Leasing, named 'Citroenvlinder / Common Brimstone'
PH-AXD	A321-252nx	12254	ex D-AXVY, ff 09.12.24, dd 19.12.24 & reg'd same day, lsd fr CDB Leasing, named 'Porseleinvlinder / Clouded Magpie'
PH-BKO	B787-10	42504	ff 27.11.24, dd 30.12.24 & reg'd same day, named 'Boterbloem / Buttercup, fleet # 'KO-060'

Transavia [HV/TRA 'Transavia']

PH-YHC	A321-252nx	12287	ex D-AZXV, ff 02.12.24, dd 13.12.24 & reg'd same day

Z Air [7Z/EZR 'Easyway']

N841AE	Emb-135KL	145667	dd 25.01.25, ferried Carbondale Murphysboro – Willemstad 25.01.25 for enty into service

Airfast Indonesia [FS/AFE 'Airfast']

PK-	DHC-6 400	993	ex C-FVDH, dd 01.25, ferried Calgary – Jakarta HLP as C-FVDH 01.12.24-27.01.25 & reg'n canx 29.01.25

Sriwijaya Air [SJ/SJY 'Sirwijaya']

PK-BBF	B737-8BK	29676	ex 2-KCMQ, dd 25.01.25 & entered service same day, lsd fr/op by BBN Airlines Indonesia

Avion Express Brasil [AEB 'Avion Express']

PR-MLD	A320-214	3601	ex 9H-MLD, reg'd 15.01.25, lsd fr Avolon Aerospace & reg'd to Avolon Leasing Irealnd 3 Ltd, ferried São Paulo VCP – Curitiba 27.01.25 prior entry into service

GOL Linhas Aéreas [G3/GLO 'Gol']

PS-GOL	B737-8	44025	ex N4022T, ff 24.02.24, dd 10.12.24
PS-GRD	B737-8	44032	ex N4022T, ff 08.09.24, dd 16.12.24
PS-GRH	B737-8	44033	ex N40231, N4022T, ff 15.10.24, dd 16.12.24 & reg'd to SFVI Aircraft Holdings Ire 6 DAC 17.01.25

LATAM Airlines Brasil [JJ/TAM 'Tam']

PR-XBS	A320-271n	12205	ex F-WZMG, ff 29.11.24, dd 12.12.24 to LATAM Airlines Group, lsd fr SKY Leasing
PR-XBT	A320-271n	12259	ex F-WZML, ff 17.12.24, dd 23.12.24 to LATAM Airlines Group, lsd fr BoComm Leasing
PR-XBU	A320-271n	12371	ex F-WWBD, ff 13.12.24, dd 30.12.24 to LATAM Airlines Group
PS-LHD	A320-271n	12398	ex F-WWIK, ff 13.12.24, dd 27.12.27, lsd fr BOC Aviation

Total Línhas Aéreas [0T/TTL 'Total']

PS-TLG	B737-4H6(F)	27674	ex N305GT, dd 27.01.25, lsd fr World Star Aviation, ferried Tucson – Georgetown 30.01.25, (N305GT canx 27.01.25)
PS-TLH	B737-4Q8(F)	25106	ex N106YZ, dd 28.01.25, lsd fr Vx Capital Partners, ferried Marana – Georgetown 31.01.25, (N106YX canx 2801.25)

Cebu Pacific Air [5J/CEB 'Cebu Air']

RP-C3909	A330-941	2074	ex F-WWYT, ff 27.11.24, dd 17.12.24
RP-C4149	A321-271nx	12172	ex B-005G, ff 06.12.24, dd 23.12.24

SAS Link [SVS 'Discover']

SE-RSU	ERJ190-200LR	19000752	ex 9H-AKU, dd 29.01.25 to NAC Aviation 29 DAC, lsd fr Nordic Aviation Capital, ferried Warsaw – Copenhagen 31.01.25 for enrty into service

SAS Scandinavian Airlines [SK/SAS 'Scandinavian']

EI-HSA	CRJ.900LR	15080	ex OE-LLA, dd 01.01.25, lsd fr/op by CityJet

Tarco Air [3T/TQQ 'Aviation Tarco'

ST-TAM	B737-85R	34801	ex N348SK, dd 24.01.25, lsd fr Sky One FZE

Egyptair [MS/MSR 'Egyptair']

SU-GFZ	B787-9	65107	ff 20.11.24, dd 11.12.24, lsd fr AerCap

Red Sea Airlines [4S/RSX]

SU-RSC	B737-81B	30708	ex N3078, dd 16..01.25, lsd fr AerCap, ferried Jinan – Cairo 25.01.25, (N3078 canx 16.01.25)

Aegean Airlines [A3/AEE 'Aegean']

SX-NAP	A321-271nx	12381	ex D-AXXI, ff 11.12.24, dd 23.12.24

AJet [VF/TKJ 'Anatolia']

TC-GMA	A320-232	3873	ex OE-IBH, dd 04.01.25, lsd fr/op by BBN Airlines until 29.03.25
TC-GMB	A320-232	2747	ex N2747A, dd 12.01.25, lsd fr/op by BBN Airlines

Pegasus Airlines [PC/PGT 'Sun Turk']

TC-RFK	A321-251nx	12124	ex F-WWSQ, ff 20.11.24, dd 16.12.24, named 'Irmak'

Turkish Airlines [TK/THY 'Turkish']

TC-LPG	A321-271nx	12364	ex D-AVZX, ff 10.12.24, dd 20.12.24, lsd fr AerCap

Camair-Co [QC/CRC 'Camairco']

OK-SWT	B737-7Q8	29346	ex EI-EUV, dd 27.01.25 & entered service 29.01.25, lsd fr/op by SmartWings

Asia Union Airlines [AUV 'Asia Union']

UK32080	A320-232	1773	ex UK32050, dd 24.01.25, lsd fr Fortress Aviation

FlyArystan [FS/AYN 'Arystan']

EI-KFD	A320-271n	12272	ex F-WWDJ, ff 20.09.24, dd 27.12.24, lsd fr Avolon Aerospace, ferried Toulouse – Almaty 15-16.01.25

Xena Aviation [MRV]

UR-UZR	An-32B	2802	ex OB-1868-P, dd 21.01.25

Jetstar Airways [JQ/JST 'Jetstar']

VH-A5B	A320-251n	12229	ex F-WWTX, ff 27.11.24, dd 12.12.24 to QANTAS Airways
VH-OYW	A321-251nx	12183	ex D-AVYY, ff 21.12.24, dd 30.12.24 to QANTAS Airways

Network Aviation (QantasLink) [NWK 'Netlink']

VH-8NV	A319-132	2679	ex N514NK, reg'd 06.01.24 to Qantas Airways Ltd, ferried Aguadilla – Perth 08-12.01.25, named 'Lancelin Island', (N514NK canx 03.01.25)

Sunstate Airlines (QantasLink) [SSQ 'Sunstate']

VH-84B	DHC-8 402	4456	ex C-GENM, reg'd 28.01.25 to Qantas Airways Ltd, named 'Winton, ferried Sault Ste. Marie – Brisbane as C-GENM 20-24.01.25 & reg'n canx 24.01.25

Virgin Australia Airlines [VA/VOZ 'Velocity']

VH-IJR	B737-8SA	44219	ex 9V-MGC, dd 20.01.25, lsd fr AviLease & reg'd same day to Pembroke Aircraft Leasing (UK) Ltd

VietjetAir [VJ/VJC 'Vietjet Air']

B-656E	ARJ21-700	196	ex B-099U, dd 23.01.25, ld fr/op by Chengdu Airlines
VN-A545	A321-271nx	11107	ex D-AVXC, ff 15.11.24, dd 03.12.24
VN-A547	A321-271nx	12010	ex D-AVXS, ff 19.12.24, dd 30.12.24
VN-A548	A321-271nx	12199	ex D-AVZY, ff 16.12.24, dd 23.12.24
VN-A549	A321-271nx	12315	ex D-AVZK, ff 23.12.24, dd 30.12.24

Vietnam Airlines [VN/HVN 'Vietnam Airlines']

VN-A514	A320-272n	12253	ex F-WWIB, ff 18.12.24, dd 28.12.24, lsd fr ICBC Leasing
VN-A515	A320-272n	12298	ex F-WWDU, ff 24.10.24, dd 025.12.24, lsd fr ICBC Leasing
VN-A877	B787-10	60295	ff 30.03.21, dd 06.12.24, lsd fr Air Lease Corp
9H-MLE	A320-214	4767	ex OE-IEE, dd 10.01.25 & entered service 14.01.25, lsd fr/op by Avion Express Malta
9H-MLO	A320-214	5363	ex EI-GSZ, dd 10.01.25 & entered service 13.01.25, lsd fr/op by Avion Express Malta
9H-MLY	A320-232	3943	ex OE-IFJ, dd 14.01.25 & entered service 15.01.25, lsd fr/op by Avion Express Malta

Vietravel Airlines [VJ/VJC 'Vietravel']

TC-FBV	A320-214	4658	ex F-WWIM, dd 08.01.25 & entered service 10.01.25, lsd fr/op by Freebird Airlines
TC-FHC	A320-214	3852	ex F-HBII, dd 08.01.25 & entered service 10.01.25, lsd fr/op by Freebird Airlines
TC-FHF	A320-214	3514	ex EI-HMK, dd 08.01.25 & entered service 10.01.25, lsd fr/op by Freebird Airlines
TC-FHP	A320-214	5906	ex EI-GRZ, dd 08.01.25 & entered service 10.01.25, lsd fr/op by Freebird Airlines
9H-SWN	A320-214	5086	ex 9H-AHS, dd 22.11.24 & entered service 24.11.24, lsd fr/op by Avion Express Malta

Air India Express [IX/AXB 'Express India']

VT-BWD	B737-8	61143	ex N1786B, ff 13.04.19, dd 27.12.24
VT-RTF	A320-251n	11705	ex F-WWBY, dd 11.01.25, lsd fr China Aircraft Leasing Group
VT-RTG	A320-251n	11780	ex F-WWTV, dd 13.01.25, lsd fr China Aircraft Leasing Group
VT-RTI	A320-251n	11884	ex F-WWBC, dd 11.01.25, lsd fr China Aircraft Leasing Group

IndiGo [6E/IGO 'Ifly']

VT-ICH	A321-251nx	12170	ex F-WWSU, ff 04.12.24, dd 21.12.24
VT-ICY	A321-251nx	12232	ex D-AVXD, ff 19.12.24, dd 27.12.24
VT-ICZ	A321-251nx	12165	ex D-AVXL, ff 25.11.24, dd 05.12.24
VT-IRO	ATR 72-212A (600)	1703	ex F-WNUH, ff 17.12.24 as F-WWEC, rr F-WNUH & ferried Toulouse – Delhi 01-04.01.25, dd 04.01.25
VT-IRP	ATR 72-212A (600)	1708	ex F-WNUI, ff 27.12.24 as F-WWEH, rr F-WNUI & ferried Toulouse – Delhi 04-06.01.25, dd 06.01.25
VT-IRQ	ATR 72-212A (600)	1712	ex F-WNUA, ff 26.12.24 as F-WWEL, rr F-WNUA & ferried Toulouse – Delhi 03-05.01.25, dd 05.01.25
VT-IRR	ATR 72-212A (600)	1714	ex F-WNUB, ff 16.01.25 as F-WWEN, rr F-WNUB ferried Toulouse – Delhi 29-31.01.25, dd 31.05.25
VT-IRS	ATR 72-212A (600)	1715	ex F-WNUC, ff 27.12.24 as F-WWEP, rr F-WNUC & ferried Toulouse – Delhi 03-05.01.25, dd 05.01.25
VT-IWQ	A321-251nx	12245	ex D-AVXI, ff 21.11.24, dd 09.12.24
VT-IWR	A321-251nx	12155	ex D-AVYT, ff 09.12.24, dd 18.12.24
VT-IWS	A321-251nx	12329	ex D-AVYN, ff 05.12.24, dd 16.12.24
VT-IWT	A321-251nx	12358	ex D-AVZS, ff 18.12.24, dd 30.12.24
VT-IWV	A321-251nx	12143	ex D-AVYA, ff 13.12.24, dd 30.12.24
VT-IWY	A320-214	4438	ex M-ABSA, dd 17.01.25, lsd fr Macquarie AirFinance, ferried Montpellier – Delhi as M-ABSA 16-17.01.25 & reg'n canx 17.01.25
VT-NCA	A321-251nx	12373	ex D-AXXC, ff 16.12.24, dd 27.12.24

Aeroméxico [AM/AMX 'Aeromexico']

XA-SRI	B737-8	66641	ff 11.06.24, dd 11.12.24

Señor Air

XA-SEA	Emb-135ER	145361	ex N265JX, dd 29.01.25

Volaris [Y4/VOI 'Volaris']

XA-VUM	A321-271nx	12206	ex F-WZMJ, ff 24.09.24, dd 05.12.24, st Aviation Capital Group on dely & lsd back

Animawings [A2/AWN 'Anima Wings']

YR-CHR	A220-300	55316	ex C-FPHB, ff 29.11.24, dd 12.12.24, lsd fr Azorra Aviation
YR-FUN	A220-300	55321	ex C-FPBD, ff 09.12.24, dd 17.12.24, lsd fr Azorra Aviation

Africa Charter Airline [FSK 'African Sky']

C5-STC	B737-476(F)	24446	ex EI-STC, dd 10.01.25 Sofia – Johannesburg

FlySafair [FA/SFR]

ZS-ZWH	B737-800	40971	ex N209TS, dd 14.01.25, lsd fr AELF, ferried Latacunga – Johannesburg as N209TS 04-05.01.25 & reg'n canx 14.01.25

South African Airways [SA/SAA 'Springbok']

ZS-SZN	A320-232	4496	ex 2-SMBC, dd 31.01.25, lsd fr SMBC Aviation Capital, ferried Doha – Johannesburg as 2-SMBC 23.01.25 & reg'n canx 31.01.25

Azerbaijan Airlines [J2/AHY 'Azal']

LY-HMD	A320-233	4906	ex OE-IEJ, dd 19.01.25 Vilnius – Baku, lsd fr/op by Heston Airlines

Aero Dili [8G/DTL 'Aero Dili']

4W-AAO	A319-115	2825	ex B-6231, dd 18.01.25 Xi'An – Bandung for painting, lsd fr AFG Aviation Ireland

Arkia – Israeli Airlines [IZ/AIZ 'Arkia']

LZ-EAJ	A320-214	1797	ex LY-BNZ, dd 11.01.25 & entered service same day, lsd fr/op by Electra Airways
OK-TVS	B737-86N	39404	ex C-GTVS, dd 04.01.25 & entered service same day, lsd fr/op by Smartwings
YR-LIC	A319-112	3689	ex 9H-XFW, dd 16.01.25 Brasov – Tel Aviv, lsd fr/op by Fly Lili
4X-AGO	A320-214	3056	ex 9H-AEP, dd 22.01.25 Larnaca – Tel Aviv, lsd fr Maverick Horizon

Miracle Air

5H-	Cessna 208B/EX	208B5844	ex N9013R, dd 02.01.24, ferried Independence – Nairobi WIL as N9013R 21-30.12.24 & reg'n canx 02.01.25

Maldivian [Q2/DQA 'Island Aviation']

8Q-IAB	A330-203	1161	ex 9H-PAX, reg'd 02.01.25 to TrueNoord Gouwzee Ltd, ferried Singapore – Male 06.01.25

Croatia Airlines [OU/CTN 'Croatia Airlines']

9A-CAI	A220-300	55324	ex C-FPBE, ff 06.12.24, dd 17.12.24, lsd fr Air Lease Corp

Air Atlanta Europe [CT/AAE 'Euroviking']

9H-AKK	B747-467F	27503	ex TF-AMK, dd 10.01.25

Eurowings Europe Malta [E6/EWL 'Black Pearl']

9H-EXY	A319-132	5941	ex D-AGWY, dd 15.01.25, entered service 22.01.25
9H-EXZ	A319-132	5978	ex D-AGWZ, dd 01.25, entered service 24.01.25

Malta Air [MW/MAY 'Blue Med']

9H-QFJ	B737-8AS	33824	ex SP-RKY, dd 22.01.25
9H-QFK	B737-800	44779	ex SP-RSX, dd 01.25

SkyUp Europe [U5/SEU 'Sky Malta']

LZ-FSH	A321-211	1932	ex OY-VKC, dd 30.12.24 Sofia – Sharm el-Sheikh, entered service same day, lsd fr/op by Fly2Sky
LZ-MDI	A320-233	3378	ex N497TA, dd 15.01.25 Sofia – Hurghada & entered service 17.01.25, lsd fr/op by Fly2Sky

Kuwait Airways [KU/KAC 'Kuwaiti']

9K-APJ	A330-941	2081	ex F-WWKT, ff 14.11.24, dd 09.12.24, named 'Boubyan'

AirAsia [AK/AXM 'Red Cap']

9M-VAE	A321-251nx	12258	ex D-AZYE, ff 03.12.24, dd 13.12.24, lsd fr AerCap
9M-VAF	A321-251nx	12225	ex D-AZWN, ff 26.11.24, dd 06.11.24
9M-VAH	A321-251nx	12154	ex D-AVYW, ff 27.11.24, dd 12.12.24

Batik Air Malaysia [OD/MXD 'Malindo']

9M-LDJ	B737-8U3	41798	ex PK-BGK, dd 29.01.25, lsd fr AerCap

Malaysia Airlines [MH/MAS 'Malaysian']

9M-MVF	B737-8	66371	ex N4002T, ff 25.10.24, dd 12.12.24, lsd fr Air Lease Corp

We welcome any feedback on this listing

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

N253BE
9air.com
九元航空
06L

Guangzhou-based 9 Air accepted delivery of Boeing 737 MAX 8, B-206L (c/n 61374) in the 'orange' livery on January 1. The all economy 189-seat aircraft is seen here, at Seattle, with a mix and match registration
V1IMAGES.COM/NICK SHEEDER

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328/25

The latest news from maintenance, repair and overhaul providers

By Nigel Pittaway

Korean Air selects ST Engineering

ST Engineering has signed a five-year engine repair and overhaul contract with Korean Air, covering the CFM International LEAP-1B powerplants fitted to the carrier's Boeing 737 MAX fleet.

Under the contract, it will provide quick-turn MRO services, including high pressure turbine (HPT) overhaul, as well as performance restoration shop visit (PRSV) services at its Singapore facility.

The Seoul-based airline is a new customer for ST and its head of engineering services, Tay Eng Guan, commented: "This agreement underscores Korean Air's confidence in our ability as a trusted partner who can deliver high-quality engine services and support the airline's long-term growth plans. As a premier MRO provider designated by CFM for the LEAP engines, we are well-positioned to enable airlines to deliver reliable operations."

ST Engineering is the first independent Asian MRO to be designated a Premier MRO provider by CFM International, and in 2024 it became capable of testing both LEAP-1A and LEAP-1B engines. Other services provided include high pressure compressor (HPC) and HPT rotor balancing, as well as high-speed grinding. (Photo Korean Air)

New deals for Lufthansa Technik

Lufthansa Technik and LOT Polish Airlines have extended their ongoing co-operation with the induction of the first CFM International LEAP-1B engine into the XEOS facility at Wroclaw in Poland. XEOS is a joint venture between GE Aerospace and Lufthansa Technik and the airline recently signed a contract covering the first batch of services for the LEAP-1B engines installed in its Boeing 737 MAX 8 fleet.

A second engine was contracted to the German MRO's Hamburg facility and has also recently been inducted. Commenting on the contracts, LOT's head of powerplant, Maciej Maciejewicz, said: "After a positive experience with Lufthansa Technik's services for our older-generation CFM engines, we are confident to now also entrust our latest-generation CFM engines to their renowned expertise, part of which is even being delivered right here in Poland."

Lufthansa Technik corporate sales executive, David Sturz, added: "We are proud of our extensive LEAP capabilities – and now even more so, as with LOT we have won another internationally renowned airline for services on this latest-generation engine. Having recently gained certification for LEAP engines, XEOS now ideally complements our LEAP engine shop in Hamburg and further supports our successful ramp-up for this important engine type. While it's great to see both facilities getting into action for our valued customer, it's especially great to service the first engine on LOT's home turf."

In other news, Lufthansa Technik announced it has signed a 12-year exclusive contract with China Eastern Airlines subsidiary, Eastern Airlines Technic, covering auxiliary power unit (APU) MRO services. The contract includes technical support at the German MRO's Hamburg facility for the Honeywell HGT1700 APUs fitted to China Eastern's Airbus A350 fleet.

Dennis Kohr, senior vice president of corporate sales Asia Pacific for Lufthansa Technik explained: "We are honoured to provide essential maintenance services to Eastern Airlines Technic and will continue to deliver high-quality maintenance services to ensure the safe operation of their A350s. The signing of this exclusive long-term agreement is also another important milestone in extending our close relationship beyond the existing component support and lays a solid foundation for more future collaborations; it will further strengthen Lufthansa Technik's position in the Chinese market and support our goal of becoming the leading A350 APU maintenance service provider in China." (Photo Lufthansa Technik)

Lufthansa Technik

Broward acquires 737

Florida-based teardown specialist Broward Aviation Services has purchased Boeing 737-8Q8, HL8294 (c/n 32798), from AerCap for disassembly and spares recovery. The 2004-built aircraft was most recently operated by South Korean carrier T'way Air. It will be disassembled at the AerCap Materials facility at Greenwood-Leflore County Airport in Mississippi, a process that was expected to be completed during February. The firm acquired the aircraft via competitive tender in partnership with AerCap and follows its recent acquisition and disassembly of a 737-700 aircraft.

After teardown, reclaimed parts will go to specialist repair facilities, which include other group companies, Jet Air MRO, and Air Accessories & Avionics. Approximately 800 components are expected to be harvested, repaired and placed into stock at hubs in Florida, Arizona, and at its newest facility in Shannon, Ireland.

Commenting on the latest acquisition, Dennis Amaty, co-founder and president of BAS Group, said: "We're procuring airframes and engines for teardown to boost our inventory and enable us to better serve our rapidly expanding global customer base. We have inventory valued at over $60m and are actively focusing on stock for the 737NG aircraft type."

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Aura Aero Integral
First look at an aerobatic trainer with fine French heritage

April 2025 issue of Pilot magazine takes a first look at Aura Aero Integral, an aerobatic trainer with fine French heritage. Derived from Mudry's fabled CAP designs and taken from concept to certification in six years, it is a new French trainer that will appeal to anyone interested in aerobatics training, UPRT and sports flying.

Concorde Conspiracies, Concorde Truths, a feature written by Pat Malone, reveals the true cause of the accident that killed all onboard Air France Flight 4590 is in danger of being obscured by conspiracy theories put forward by one former Concorde pilot, say many of his BA flight crew contemporaries, defending the honour of their French counterparts.

Plus, there's a full flight test of the Beech C24R Sierra – the sole Sierra on the UK register and a Piper Arrow and Cessna Cardinal RG competitor that is unique in more than one sense of the word.

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PHOTO: KEITH WILSON

Letters to the editor

Dear Editor,
I am writing today to simply say thank you. Six years ago, I found your magazine in the supermarket and convinced my parents to let me buy it. It immediately opened up a whole world of aviation to me and would eventually help set the course of my life. From then on, I have bought every issue and started working towards my PPL. Fast-forward to today, I have just completed the first assessment for the BA Speedbird Academy programme. Your magazine made me realise a dream which, after today, is one huge step closer to becoming a reality. So thank you to everyone who works for the magazine for giving me this gateway into aviation and opening this world of opportunities for me. It is something I'll be eternally grateful for.
Thanks again,
Joe Marriner

Ed: Joe, your story has touched the whole *Airliner World* team, so thank you for sending it. Congratulations on completing the first assessment for the BA Speedbird Academy, and best of luck with the rest of the process. I'm sure your story will inspire other budding young aviators reading this to follow their dreams. Please keep us posted on how you get on.

Dear Editor
Airliner World is always eagerly anticipated, but I have to say that the March 2025 edition set a new benchmark. This issue had everything from the entertainingly informative and nostalgic Adieu 757 and Starways articles to the *From the Cockpit* feature by Captain Mawgan Grace. But the standout feature had to be *Flying the Goose* by Andreas Rohde, who skillfully evoked a pioneering time in the Pacific Northwest around Vancouver when airmanship was critical in dealing with the harsh and unpredictable climate and terrain of these beautiful but hazardous coastal regions. A most fascinating and absorbing read.
Kind regards to all your team,
Rob Cole

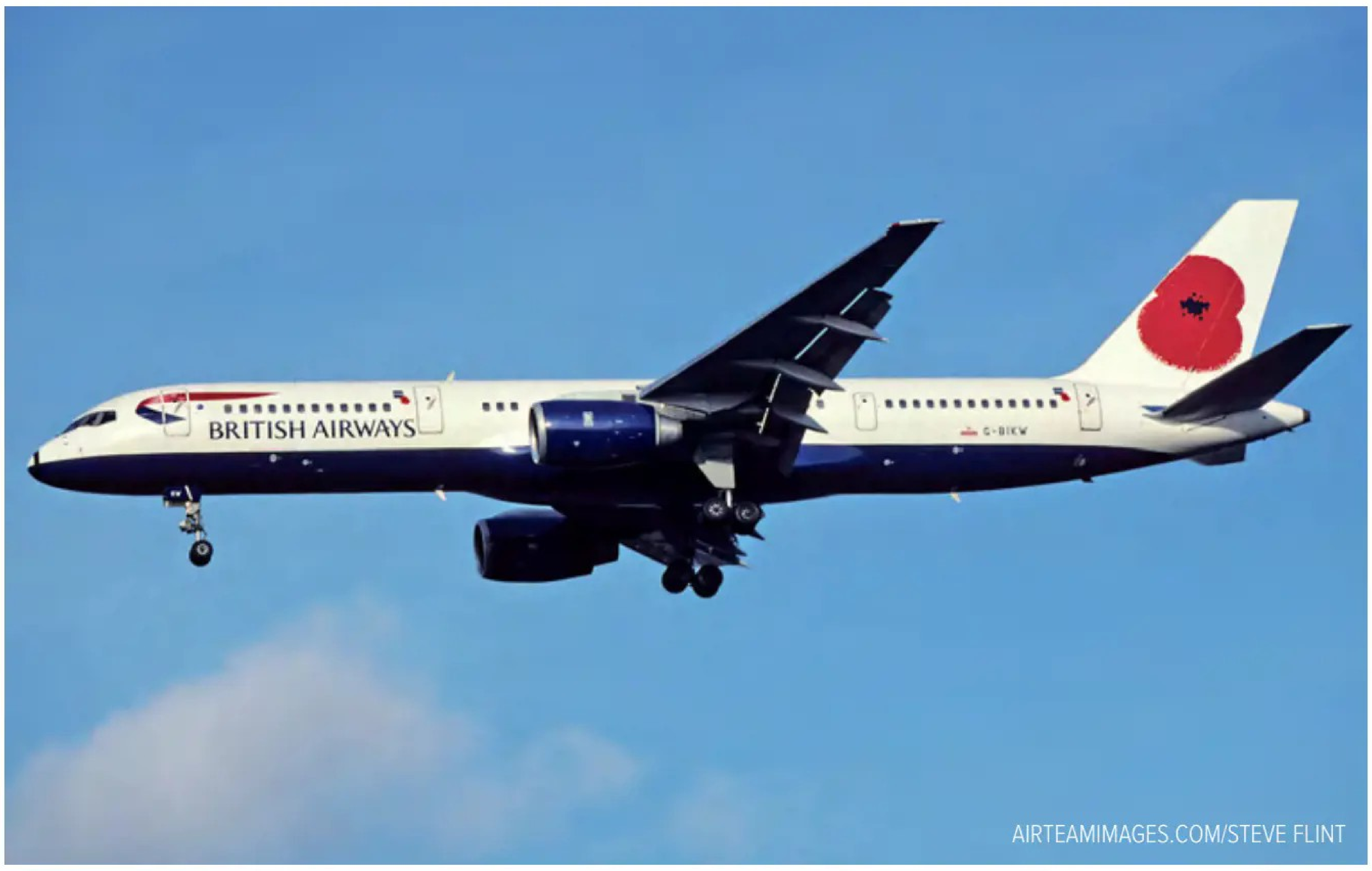
Ed: Thank you for the letter, Rob, and for sharing your memories of your stay on Vancouver Island with us. Our March issue certainly seems to have been a hit with our readers, particularly the stories you mentioned.

Dear Editor,
Greetings from Melbourne, Australia. I am a longtime subscriber to your excellent magazine. Like many people, I loved the Boeing 757 both visually and to fly in as a passenger.

However, there was little chance to fly in one in Oz. My chance came during the pilot's strike covering domestic services in Australia between October 1989 and April 1990. Ansett and TAA/Australian Airlines were forced to operate their flights using aircraft from the UK, USA and Europe. The majority of the flights I flew in were Boeing 737-300s, supplemented by three 757-200s and a sole 727-200 Advanced. One surprise journey for me occurred when British Airways Flight BA10 Boeing B747-236B, G-BDXF (c/n 21351), diverted through Adelaide to Melbourne to assist TAA's stranded passengers. Two of the 757-200s were Air 2000 examples, plus a sole Monarch 757-2T7, G-DRJC (c/n 23895). The 727 belonged to Dan Air, G-BHNF (c/n 21438).

My first flight on a 757 took place in May 1988. All the remaining 757 flights, from my total of 9, were with British Airways from Edinburgh to London/Heathrow. Four more were made between July 1991 and September 1994, three of which were on Manchester Super Shuttles and one more from Edinburgh. My very last 757 flight was in April 1997 on British Airways flight BA1394 from London/Heathrow to Manchester, on board G-BIKW (c/n 23492).

All these took place during regular visits to Britain!
Regards
Peter A Stowell



AIRTEAMIMAGES.COM/STEVE FLINT

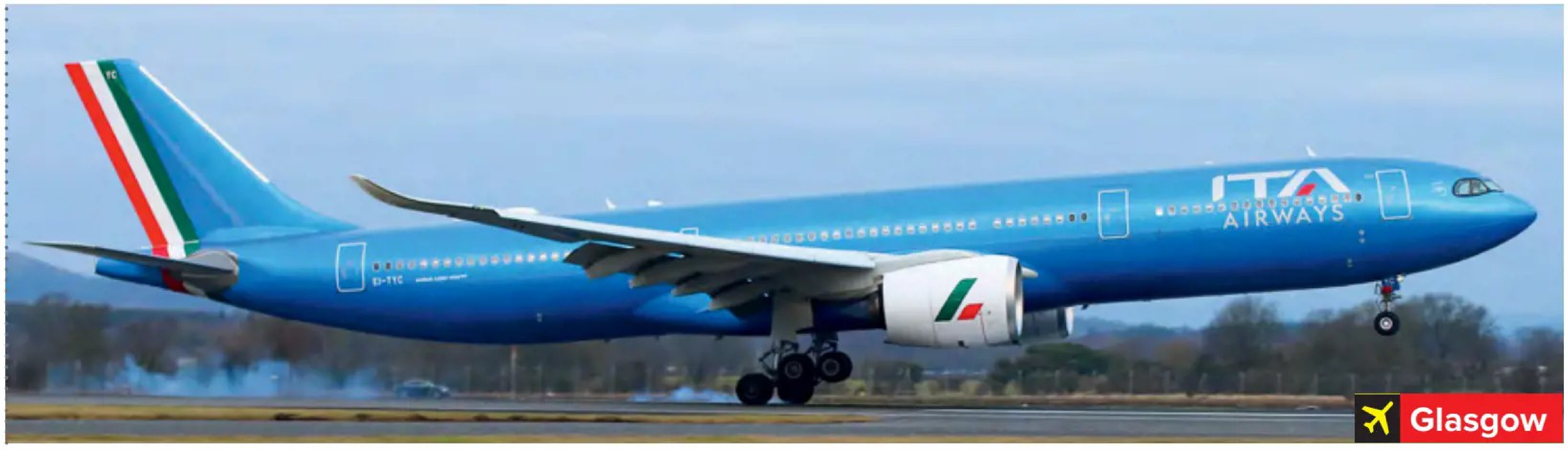
Ed: Thanks so much for sharing your memories of the Boeing 757, Peter. She really was an adored aircraft around the world and holds a special place in the *Airliner World* team's heart. We have included a picture of the last 757 you flew on in April 1997, wearing a special 'Pause to Remember' poppy tail art for Remembrance Day 1999.

GET IN TOUCH WITH AIRLINER WORLD

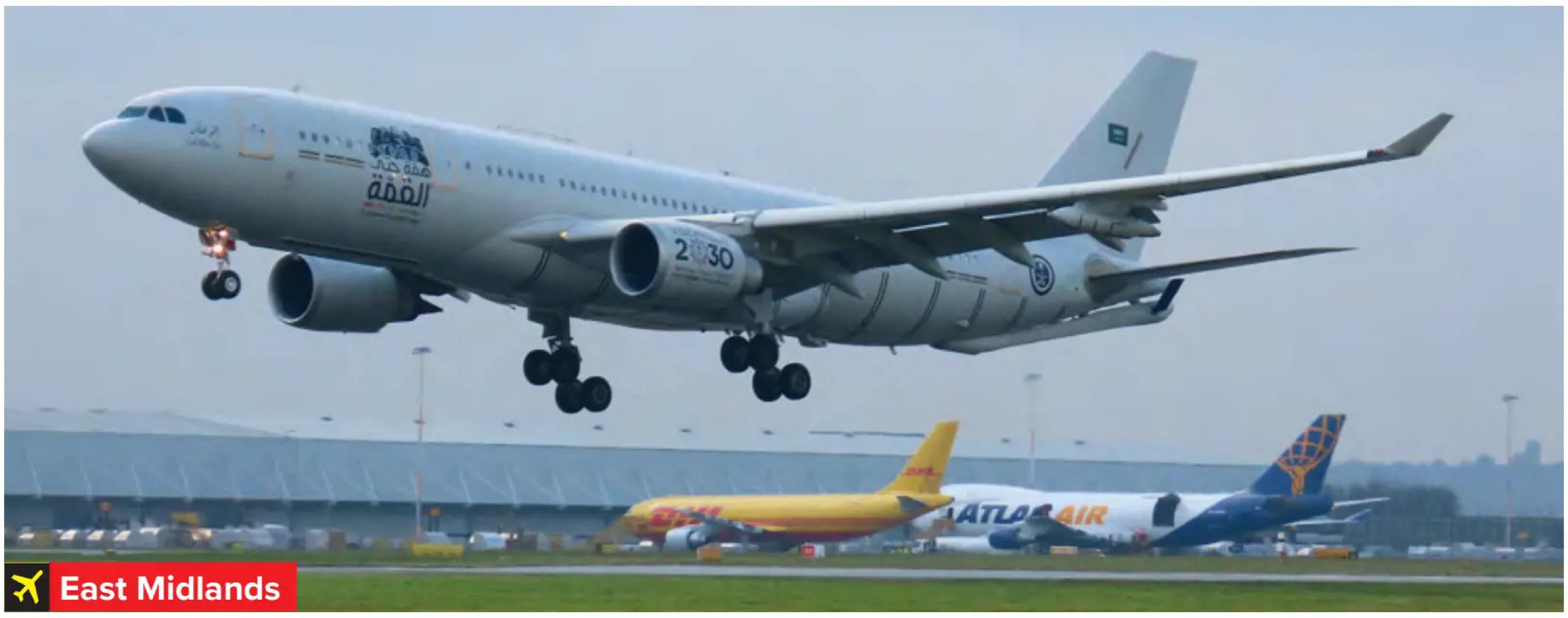
Do you have a historical tale, burning question, or comment about the magazine to share with our global audience? Get in touch via airlinerworld@keypublishing.com with the subject 'Letters to the Editor', or drop us a message on Facebook.com/AirlinerWorld, on Twitter @_AirlinerWorld or join the debate on our Key.Aero forum. As we return to the editorial office, we are also able to welcome letters once again – the postal address is: ***Airliner World*****, PO Box 100, Stamford, Lincolnshire, PE9 1XQ**

UK *Visitors*

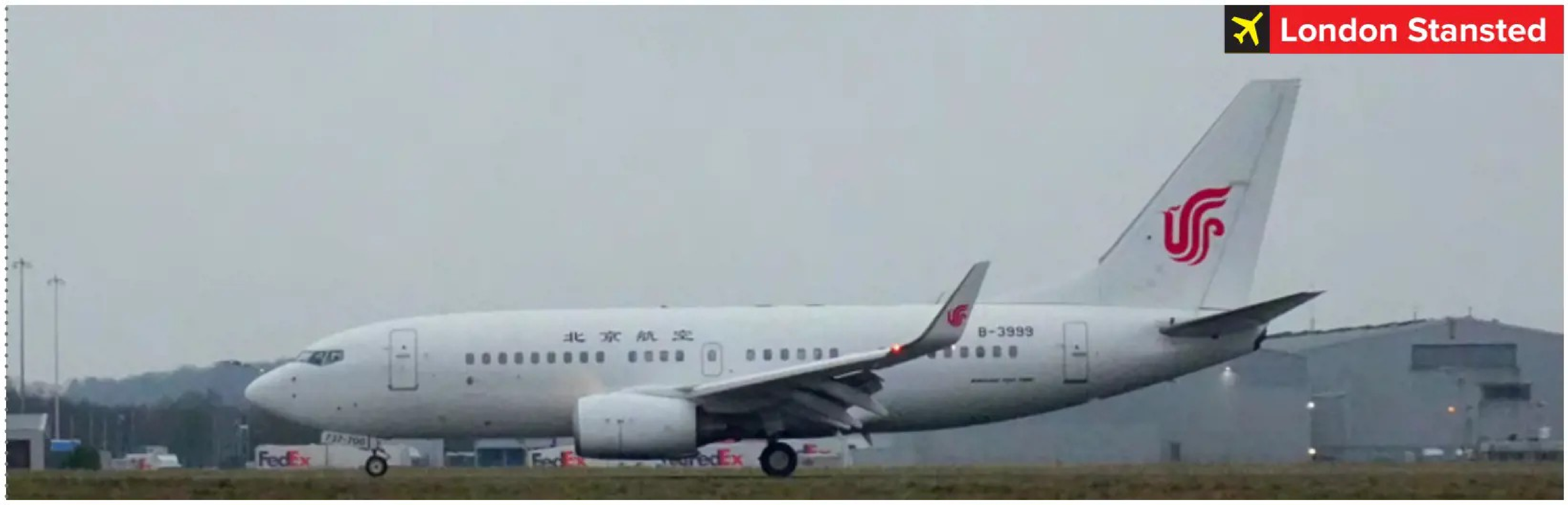
We present a selection of images of visiting aircraft from airports around the UK. For the most part, they're commercial jets, but almost all of them are unusual types, wearing new or unique liveries, or first visits by an airline or airliner to a particular airport. If you see something out of the ordinary while on your travels, please send in your pictures. Photos can be emailed to **airlinerworld@keypublishing.com** Please ensure you provide full details with the images, particularly the date, location, airline name and aircraft identity



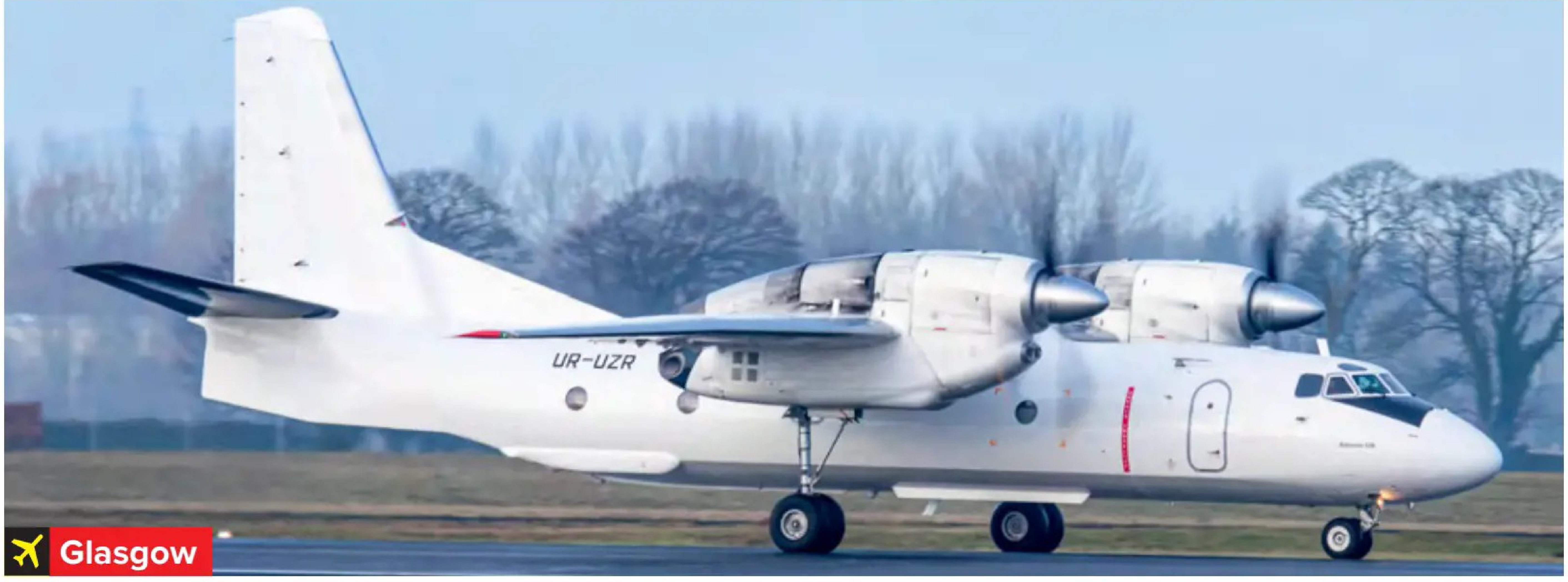
Brightening the grey Scottish skies with its eye-catching livery was this ITA Airways Airbus A330-941, EI-TYC (c/n 2052), captured arriving at Glasgow on February 13. The one-year-old widebody had positioned empty from Rome/Fiumicino to operate a football charter flight FRASER MURDOCH



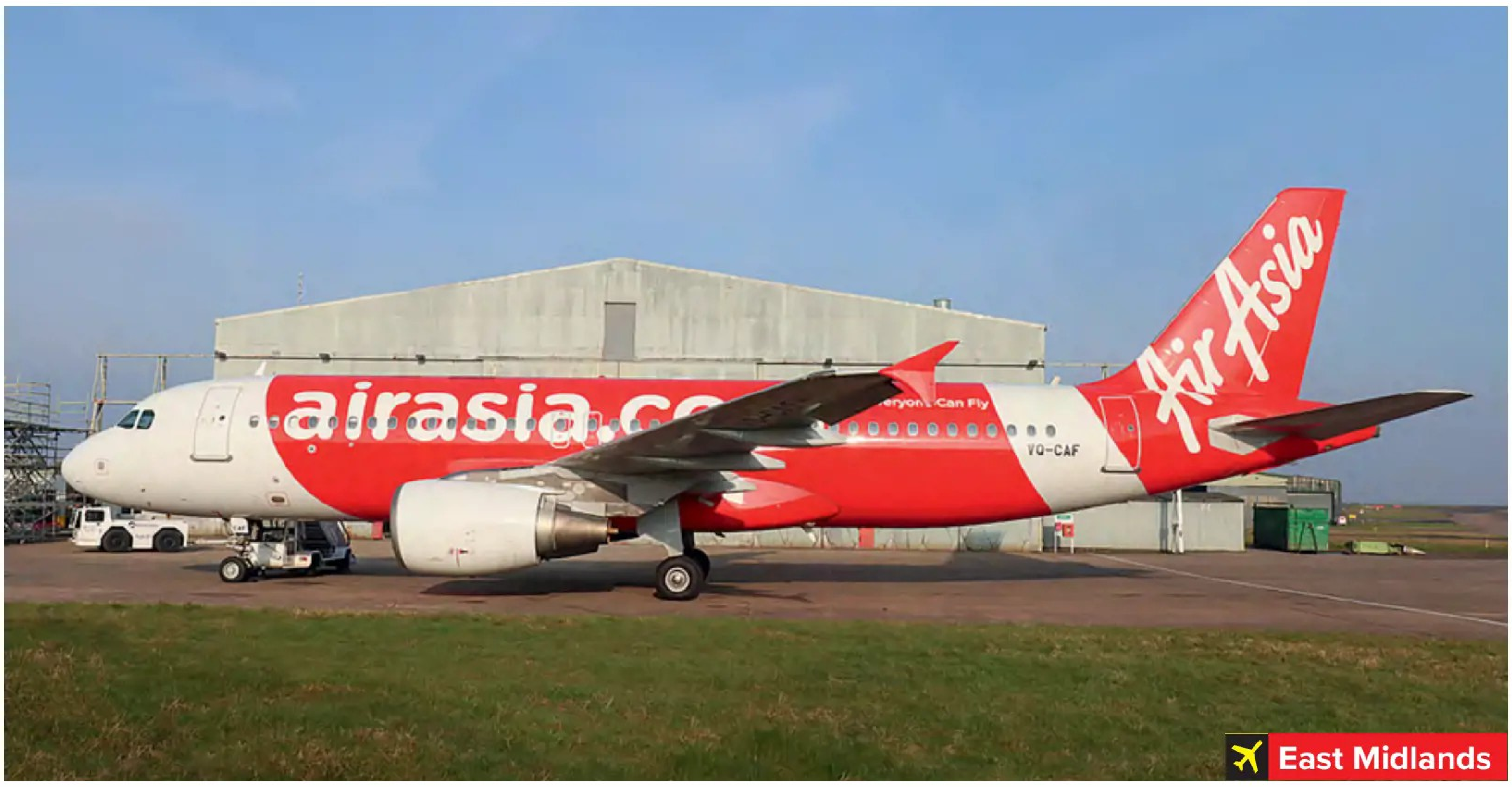
Royal Saudi Air Force Airbus A330-202MRTT, 2406 (c/n 1516), is seen arriving at East Midlands Airport, bringing in ground crew for the upcoming Exercise Cobra Warrior at RAF Waddington. In the background, Atlas Air Boeing 747-47UF, N408MC (c/n 29261) sits on the DHL apron awaiting loading for an F1 charter to Bahrain MATTHEW COCKRELL



This 13-year-old Boeing 737-79L BBJ was seen making a rare visit to London/Stansted on February 12. The CFM56-7B-powered aircraft, B3999 (c/n 41090), belongs to Air China but is operated by Beijing Airlines, the business jet subsidiary of the Chinese carrier BENJAMIN SILVER

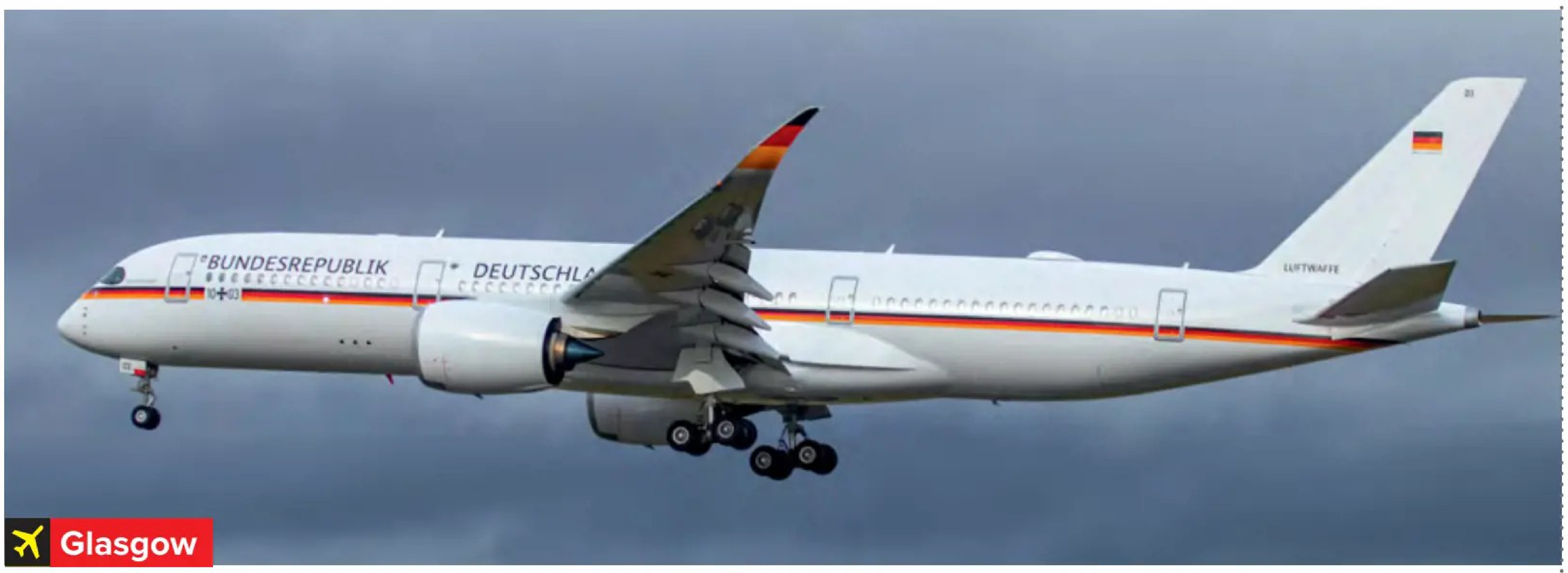


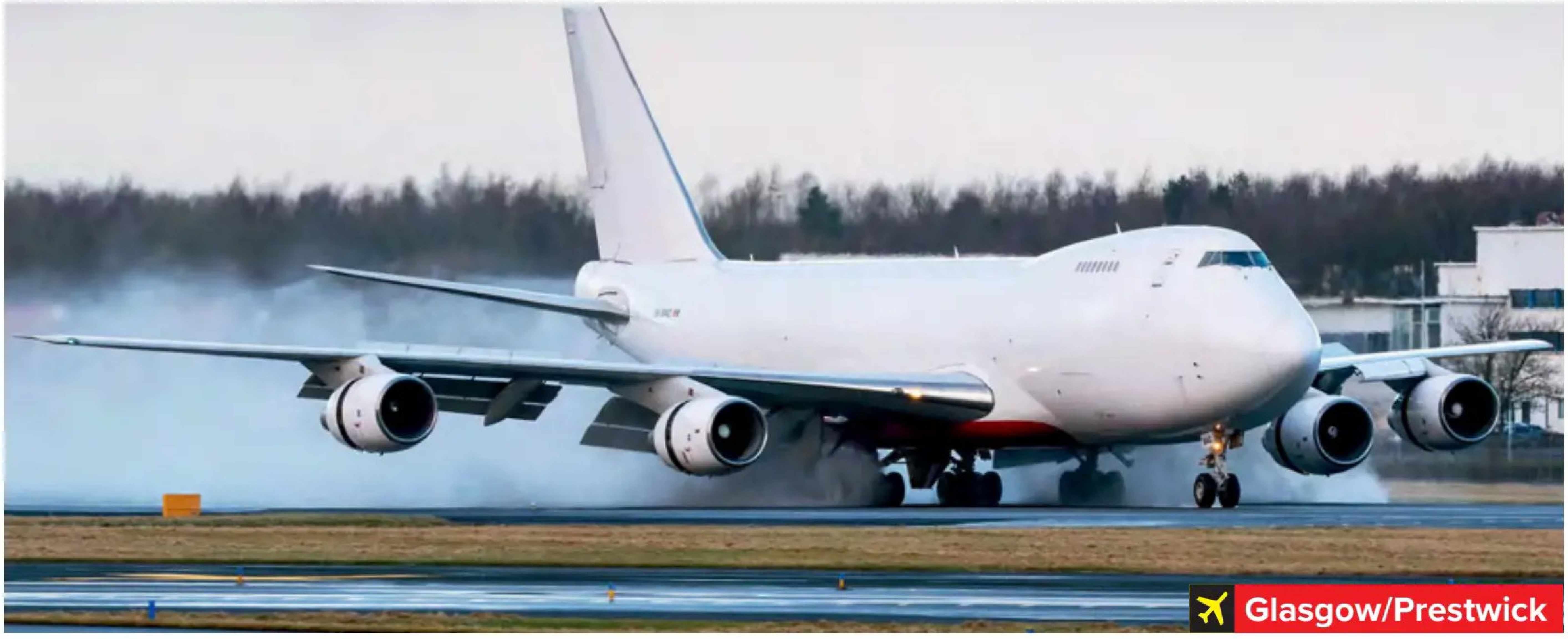
Wearing an all-white livery is this Xena Antonov An-32P, UR-UZR (c/n 2802). The aircraft, originally delivered to Ukraine International Airlines in 1992, is pictured at Glasgow, taxiing out for departure to Piešťany, Slovakia, having arrived from Keflavik for fuel SH



Former Indonesia AirAsia Airbus A320-216, VQ-CAF (c/n 2881), is seen at East Midlands on February 16. After being in storage since October 2024, it made the journey from Jakarta, with tech stops in Columbo, Dubai and Cairo. The 18-year-old jet is due to be painted in the colours of its new ACMI-focused operator, HelloJets, registered YR-HAA JOHN GREGORY

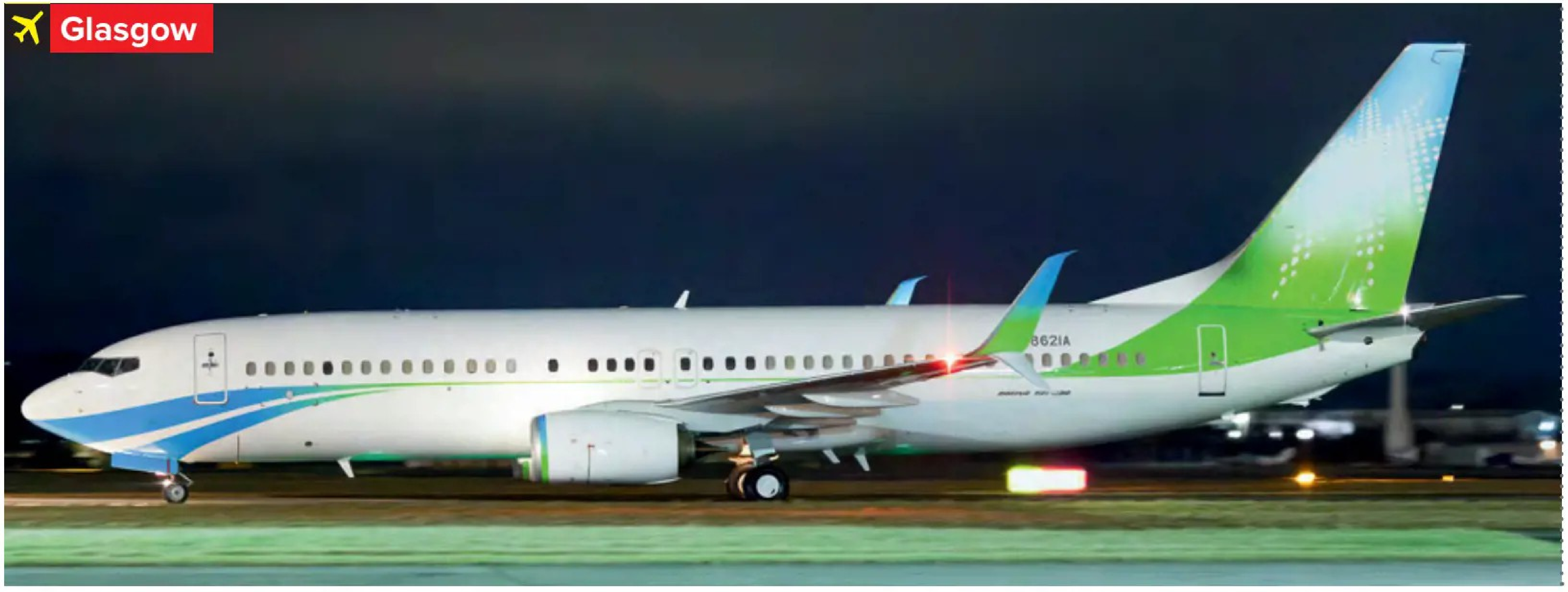
This German Luftwaffe Airbus A350-941, 10+03 (c/n 416), was carrying out a training flight when it was pictured at Glasgow. The aircraft had originally departed Cologne and routed via Billund. After taking on some fuel at the Scottish airport, it departed to Toulouse before returning to its Cologne base SH





Becoming a rare sight at airports around the world, not just in the UK, is this classic Boeing 747-281F, ER-BAQ (c/n 23139), belonging to the Moldovan cargo carrier Fly Pro. Pictured at Glasgow/Prestwick on January 29, the vintage airframe had originally been delivered to Nippon Cargo Airlines in February 1985
KYLE MCKINLAY

This ex-Southwest Airlines Boeing 737-8H4, N8621A (c/n 39617), was on a delivery flight to its new operator Aloula Aviation. The aircraft had routed from Phoenix/Goodyear airport, where it was painted in its new livery, via Bangor and Glasgow before commencing the final leg of its journey to Dammam, Saudi Arabia
ROLF JONSEN



Tecnam trainers for Cyprus Airways Flying Academy

Tecnam and Cyprus Airways Flying Academy (CAFA) have announced a purchase agreement for two P2008JC single engine, high-wing, two-seater aircraft. These new airframes will be used for ab-initio training. This new acquisition will standardise CAFA's fleet and increase the organisation's training capacity.

Based at Larnaka International Airport, the flying school – which has the "strong backing" of Cyprus Airways – already has a P2006T in its fleet and has trained hundreds of airline pilots serving the world's leading carriers.

Christos Limnatitis, accountable manager at CAFA, said: "This order marks a turning point in [our] vision to strengthen its position among the leading aviation training organisations within the EASA ecosystem. In addition to their undisputed flying qualities, the Tecnam aircraft are state-of-the-art, environmentally friendly aircraft that underscore CAFA's commitment to quality and sustainability in commercial aviation training."

Walter Da Costa, Tecnam's chief sales officer, added: "Cyprus Airways Flying Academy's choice of Tecnam is a testament to our ongoing commitment to innovation in flight training. We are delighted they've selected our aircraft for this expansion, recognising that today's students deserve a modern, technologically advanced platform to prepare them for the complexities of today's airline environment. Tecnam aircraft provide that critical bridge, enabling a seamless transition into the professional cockpit." (Photo Tecnam)

Festivities at flydubai

Low-cost airline flydubai is set to enhance its training capabilities with the opening of its new Flight Training Centre, which was set to commence operations during February 2025. The carrier's chairman, Sheikh Ahmed bin Saeed Al Maktoum, recently inspected the facility, located on the flydubai Campus which is situated about ten miles southeast of Dubai International Airport.

During the visit, Sheikh Ahmed was given a tour of the centre, which houses full-flight simulators (FFS) and advanced training facilities. The tour included visits to briefing/debriefing rooms, classrooms, and computer-based training rooms, in addition to the Boeing 737 FFS.

He commented: "I am pleased to see the flydubai Flight Training Centre become a reality today. This is a vital part of flydubai's growth strategy and reflects its unwavering commitment to innovation, increased operational efficiency and investing in developing its in-house capabilities to support future plans as well as Dubai's position as a global hub for aviation."

The new 38,000sq ft facility is equipped with six simulator bays, providing a capacity of over 43,000 training hours per year. The modular construction design of the centre allows for future expansion, with two additional simulators expected to be installed by the end of 2026. (Photo flydubai)

flydubai
CAE

Archer achieves FAA training certification

US eVTOL start-up Archer Aviation received FAA certification to launch its pilot training academy. This certification, referred to as Part 141, is granted to a flight school by the regulator, signifying that it is a formally recognised and regulated institution for pilot training.

With this certificate, Archer can now train and qualify pilots as part of its newly launched training academy, with plans to build a pipeline of pilots in preparation for its planned commercial air taxi services with its Midnight eVTOL aircraft.

The FAA granted Archer its Part 141 certificate during a ceremony which was held at Archer's flight test facility in Salinas, California.

Tom Anderson, Archer chief operating officer of UAM, said: "Thanks to the hard work of the Archer team and the FAA, Archer now has its Part 141 certificate in hand – yet another step towards our commercial launch. I look forward to seeing the results of this effort in the form of talented pilots who can one day be at the controls of our Midnight aircraft. The FAA continues to be an invaluable partner as we work together toward the safe entry of air taxis into the national airspace."

According to Archer, its goal is to transform urban travel, replacing 60-90-minute commutes by car with estimated ten-20-minute electric air taxi flights. Archer's Midnight is a piloted, four-passenger aircraft designed to perform rapid back-to-back flights with minimal charge time between flights. (Photo Archer Aviation/Business Wire)

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AZERBAIJAN
4K-AZ65
AZ65

Azerbaijan E190
crash preliminary report released

ABOVE: *Embraer E190, 4K-AZ65 (c/n 19000630), is seen here in Bahrain on December 23, 2024 – just a few days prior to the crash* V1IMAGES.COM/ WILLIAM MUSCULUS

Recordings from the black boxes of an Azerbaijan Airlines Embraer E190 which crashed in Kazakhstan on Christmas Day last year reveal the extent of the damage the crew had to deal with after an explosion in Russian airspace crippled the jet.

According to a preliminary report by the Kazakh Aviation Accidents and Incidents Investigation Division (AAIID), 4K-AZ65 (c/n 19000630) suffered a myriad of failures after a "sonic boom" was recorded by the cockpit voice recorder (CVR). Most significantly, proper pressure in the aircraft's three hydraulic systems was lost immediately in the case of the third system, within 16 seconds for the second, and seven seconds later, the second system reduced to 4psi. Another sonic boom was heard on the CVR two seconds later. From the moment of the first noise, the Embraer's elevator, aileron and rudder remained fixed in the zero position until the end of the flight. The aircraft also began to depressurise.

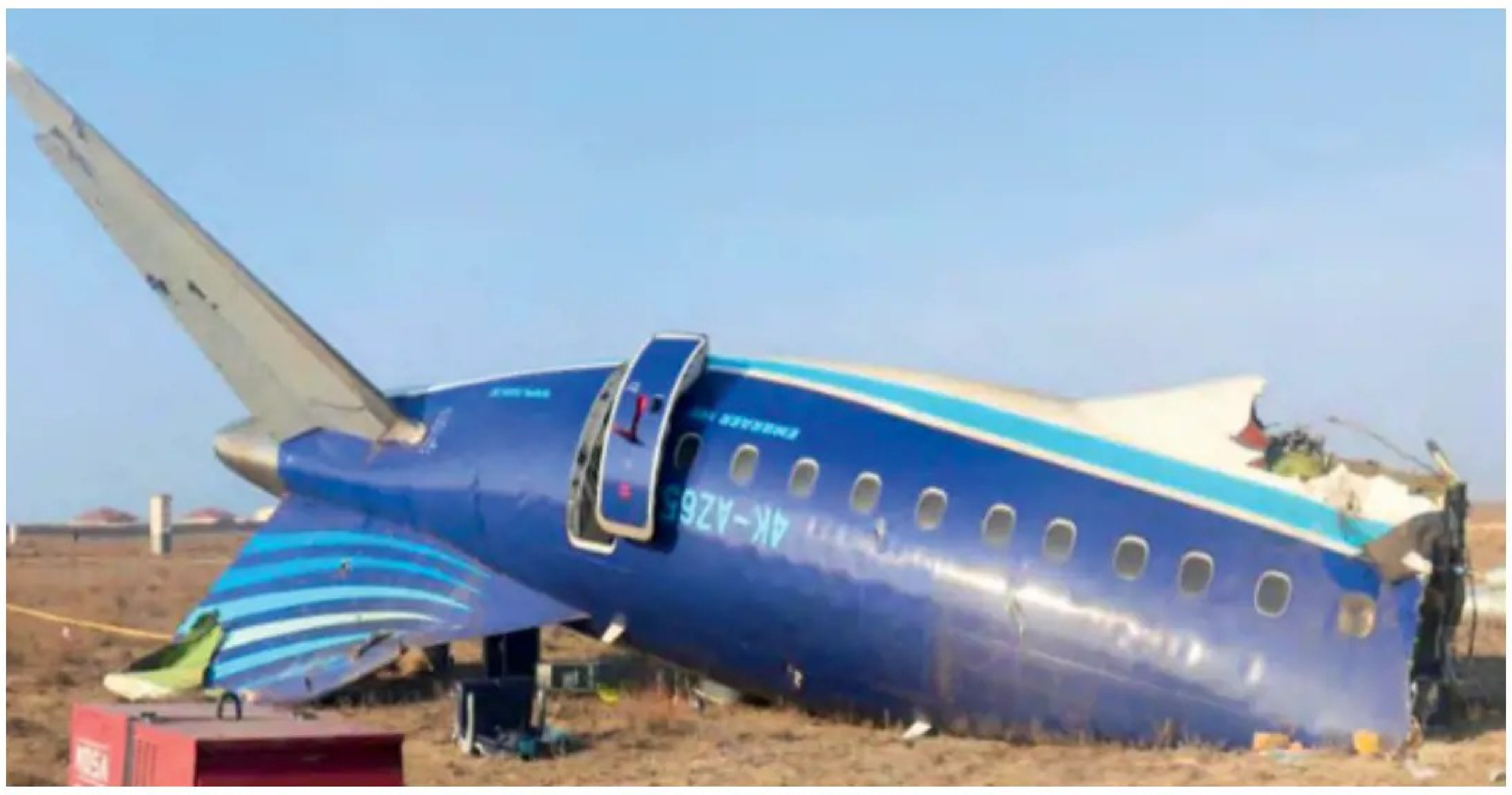
Flight history

The 11-year-old narrowbody was carrying 62 passengers and five crew on a flight between the Azerbaijani capital of Baku and the Russian city of Grozny on December 25, 2024. Flight 8243 departed at 0356hrs UTC and climbed to its cruising altitude of 30,000ft. The flight proceeded as planned without any issues.

At 0412hrs, the jet exited Azerbaijan airspace, and the crew contacted Rostov Control who then instructed it to proceed to waypoint REMKA after passing waypoint MKL and expect arrival via the REMKA1R standard arrival route.

The aircraft's crew told air traffic control (ATC) that they were ready for descent at 0426hrs and 14 seconds later repeated the request for descent but added that they had lost both GPS and requested the REMKA1V arrival. They were instead given the 1X procedure.

While being given a new approach procedure, the CVR detected a ground



RIGHT: *The tail and part of the rear fuselage came to rest inverted* ALL IMAGES AAIID UNLESS STATED

proximity warning system (GPWS) "Terrain terrain, pull up, pull up, pull up" audible alert. The same warning would sound for a second time some ten minutes later.

The aircraft made an unsuccessful approach to runway 26 at Grozny, performing a go around due to a "non-stabilised approach" at 0453hrs. The crew requested vectoring for the go around and a second approach to land.

There was then some confusion between the controller and aircraft with the former believing the jet needed a GPS-based approach. After again reiterating they had lost both GPS, ATC then confirmed vectoring for a second NDB approach.

At 0509hrs, flight 8243 was cleared to land on runway 26 with ATC informing the crew that the lights at the airport were turned on. Three minutes later, the crew made the decision to return to Baku and informed ATC of this.

They were given a vector to turn right to a heading of 360°. At 0513hrs, as the aircraft was climbing through 3,500ft in a right-hand turn, the first of two sonic booms was recorded followed by the audible alarm for the autopilot and autothrottle disconnection. Over the next 23 seconds, all hydraulic pressure bled away before a second boom was heard.

Cabin altitude began to rise, coinciding with the E190's indicated altitude after about 20 seconds, indicating full depressurisation. The aircraft had been cleared to 15,000ft and continued its climb to about 8,000ft before sinking to approximately 6,000ft, and then climbing again to 10,000ft.

There was subsequent discussion between the crew and ATC about the weather conditions at various diversion airports including Mineralnye Vody (140 miles to the northwest), Makhachkala (105 miles to the southeast), Baku (300 miles to the southeast) and finally Aktau in Kazakhstan, located 270 miles to the east across the Caspian Sea.

At 0539hrs, the crew confirmed with ATC that they had 8,300kg of fuel remaining, "both engines operational, but aileron and elevator control lost". Three minutes later, the decision was made to proceed to Aktau.

Data recovered from the FDR shows the crew were constantly manipulating the thrust levers, advancing and retarding them and using differential settings, in order to stabilise the stricken jet's flight path across the Caspian Sea.

Upon contact with Aktau Tower at 0602hrs, the crew declared a mayday, informing the controller that they had "lost control surfaces and are managing the aircraft using thrust levers", before requesting an emergency landing on runway 11.

The pilots successfully limped across the Caspian Sea, but the jet crashed approximately three miles northwest of the airport.

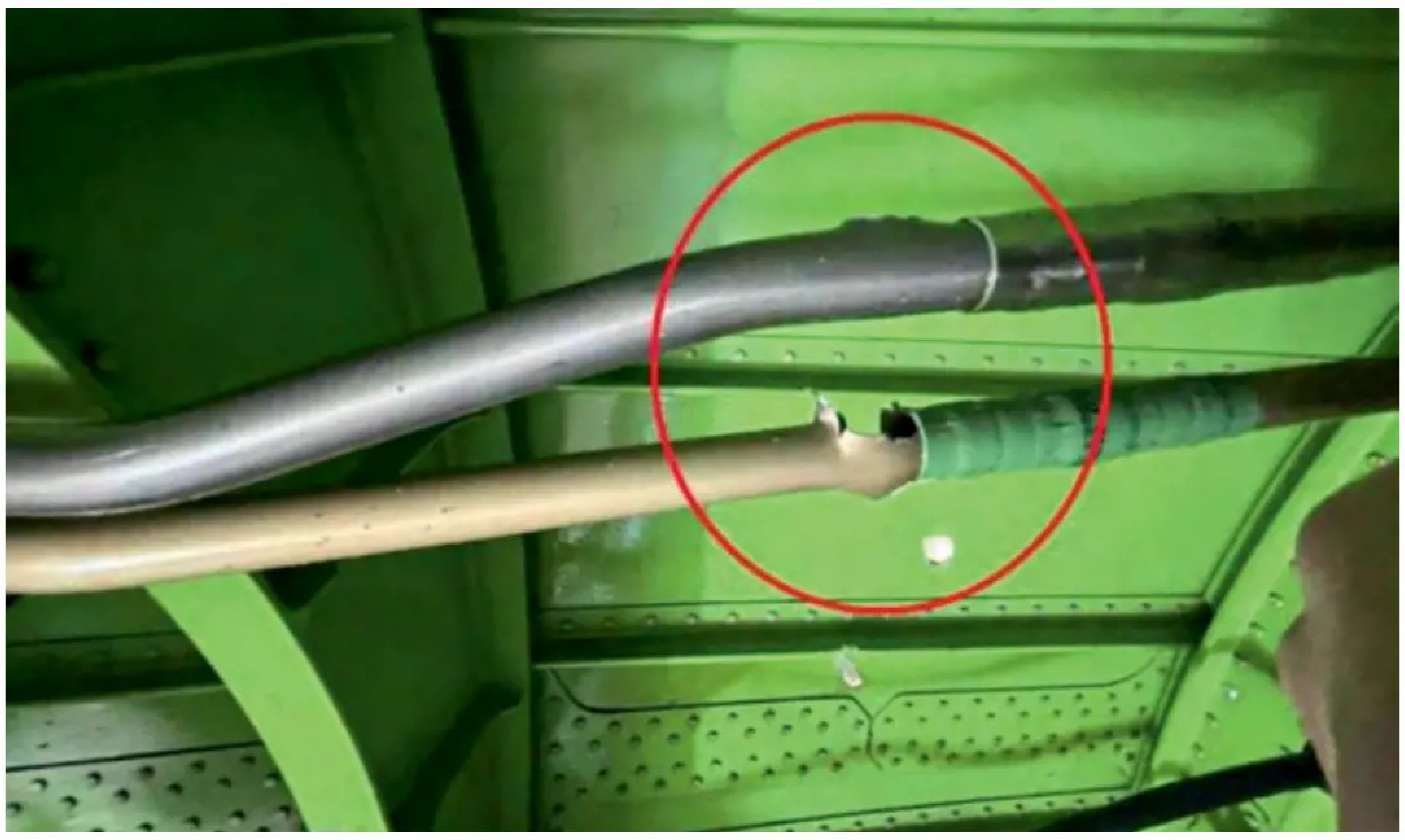
Both pilots, one cabin crew member and 35 passengers died. However, 29 occupants (two cabin crew members, and 27 passengers) survived. According to the report, six of the surviving passengers miraculously received no injuries at all.

Aircraft damage

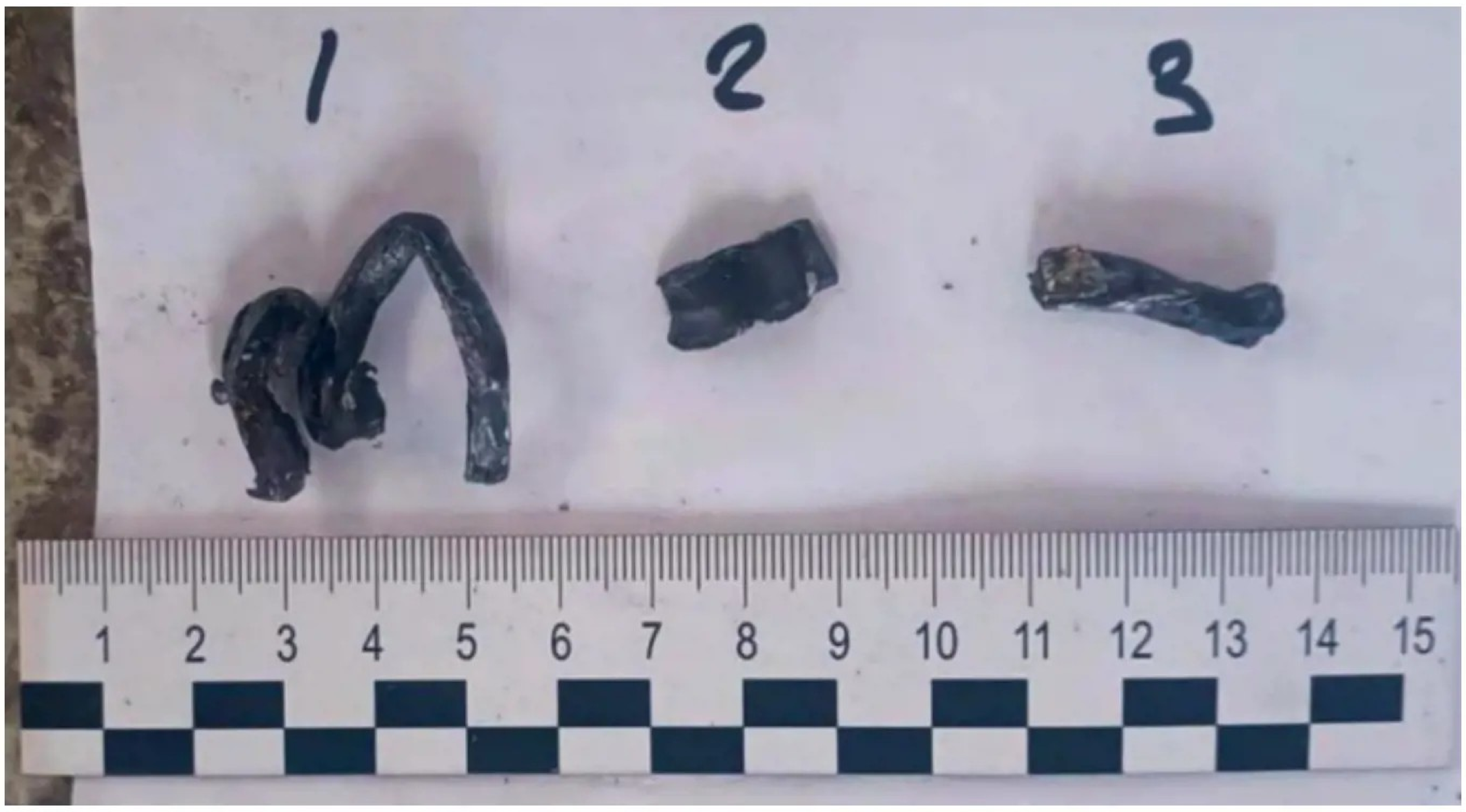
The aircraft was completely destroyed and partially burned due to a post-crash fire. While investigators continue their work, an initial inspection of the wreckage showed multiple holes of varying sizes in the tail, fuselage, vertical and horizontal stabiliser, elevator and rudder. Similar damage was also found in the left engine and left wing of the aircraft. Inside, the hydraulic lines and reservoirs, along electrical wiring for the pitch trim also showed extensive damage indicating "penetration of external objects into [the aircraft]".

"To determine the nature and origin of the [damage] caused by foreign objects, appropriate research and examinations will be carried out," the report added.

The investigation is continuing and a final report into the crash will be published in due course. AW



ABOVE: ***A damaged tube for hydraulic system number one***



BELOW: ***Part of the foreign metal objects removed from the left stabiliser and the APU compartment***

Sorting out SAS

SAS Scandinavian Airlines has been on a rollercoaster ride for the past three years. Out of bankruptcy protection with a new ownership structure and as a SkyTeam member, the carrier has been reborn. **Richard Schuurman** spoke to CEO Anko van der Werff to find out more

SAS
Scandinavian

When Anko van der Werff arrived in Stockholm during the summer of 2021, he returned to a city where he had previously spent four years in various roles at Air France-KLM. This time, however, he was on his way to the headquarters of SAS Scandinavian Airlines to take over as CEO from Rickard Gustafson. He had a clear mission ahead of him.

The Dutchman is often called the 'airline doctor', having restructured Aeroméxico and Avianca through Chapter 11 bankruptcy protection between 2014 and 2019. Exactly these qualifications were required to transform SAS Group, which had been severely weakened by the COVID-19 pandemic, but also suffered from a number of underlying problems. A SEK1.5bn (£110m) capital raise in 2020, a Norwegian loan for NOK1.5bn (£107m), plus SEK6.3bn (£460m) in credit facilities in 2020 and 2021 saw the airline weather the crisis, but not for the long-term as debt grew.

In February 2022, Van der Werff launched SAS FORWARD, an extensive transformation plan aimed at reducing annual structural costs by SEK7.5bn (£540m), convert around SEK20bn (£1.4bn) of debt and hybrid notes into common equity, and raise at least SEK9.5bn (£700m) in fresh equity. At the time, SAS had around SEK30bn (£2.2bn) in debt and reported a net loss of SEK4bn (£293m).

RIGHT: ***Anko van der Werff has been CEO of SAS since July 15, 2021*** SAS

When the influential pilot unions in Sweden, Norway, and Denmark called a strike on July 4, 2022, and talks with creditors about debt restructuring stalled, Van der Werff and the Board saw no alternative but to file for voluntary Chapter 11 bankruptcy protection with the Bankruptcy Court in the Southern District of New York the next day. With that began an extensive two-year period that included dozens of court sessions, negotiations, aircraft lease restructurings and rejections, discussions with creditors, and a solicitation process to raise fresh equity.

It ended with Air France-KLM buying into SAS, followed by the carrier switching from Star Alliance to SkyTeam, of which more later. On March 19 last year, the New York Bankruptcy Court approved the transformation plan. A week later, the parent and holding company SAS AB filed a reorganisation plan with a Stockholm court that was approved in July.

Restructuring done

While counsellors continued to file documents and plan sessions at the New York court into 2025, Chapter 11 restructuring is "99.99% done," Anko van der Werff told *Airliner World*. "There are always some formalities left and parties that try to file claims, but the courts in the US and Sweden, and the European Commission have approved the plan. There are some leftovers but they [won't] affect the outcome. It's done."

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SAS
SE-DMO
SAS
BELOW: ***SAS uses its three Airbus A321LRs to fly long-haul flights connecting Oslo and Copenhagen with several North American destinations including Washington DC, Boston, and New York*** VINCENZO PACE

SAS
Scandinavian
SE-RSB
SAS

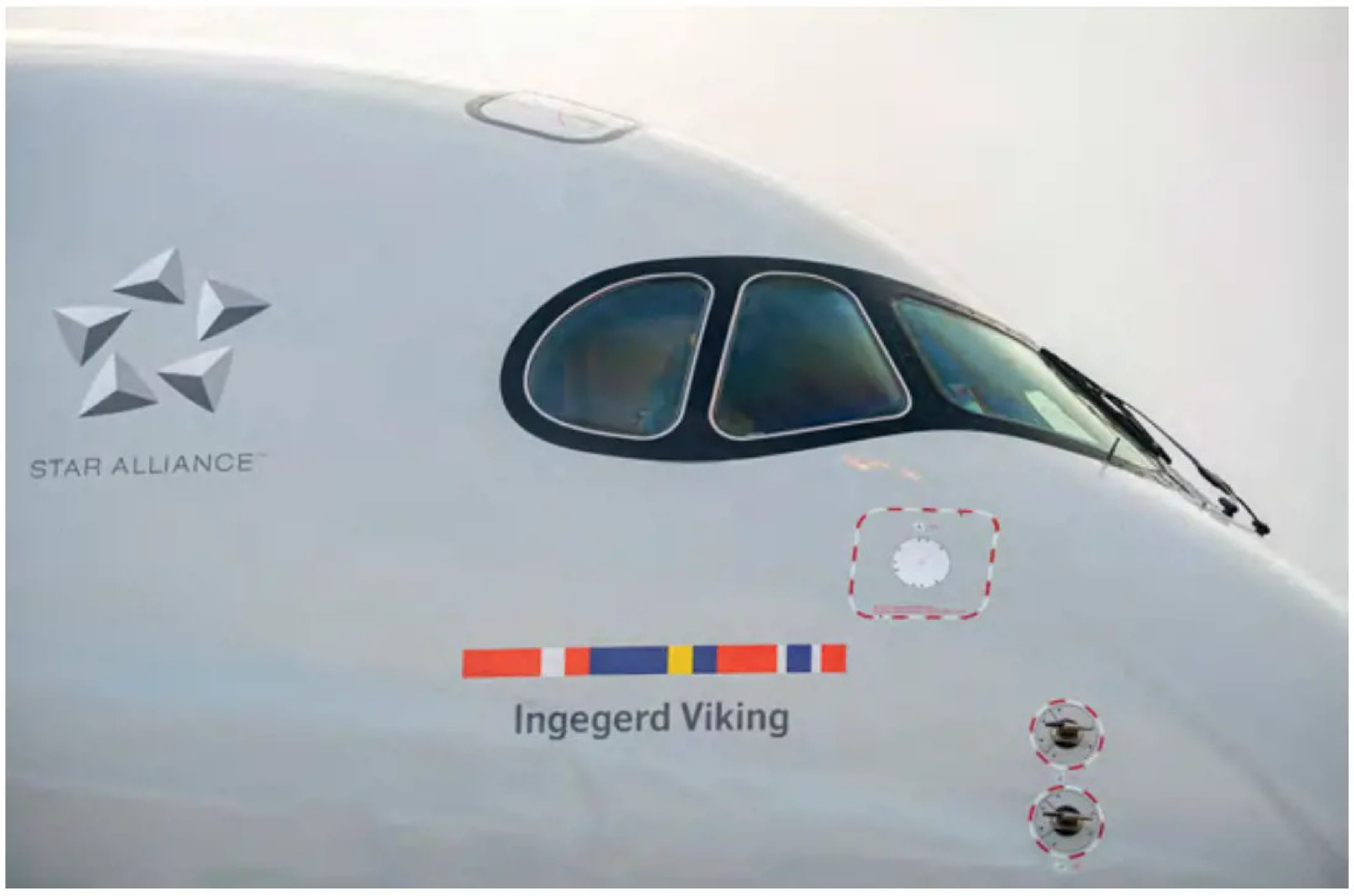
ABOVE: ***The flag carrier current has a quartet of Airbus A350-941s, all configured to seat 300 passengers in a three-class layout*** VINCENZO PACE

Having seen how Chapter 11 worked out well for his previous airlines Aeroméxico and Avianca, Van der Werff said it has been the right tool to transform SAS. "Chapter 11 does three things for you. It still gives the airline a lot of leverage. For example, you can't negotiate lease restructurings without it: nobody can take the aircraft away from you, but thanks to bankruptcy protection, we could say that we didn't need all of them. Secondly, Chapter 11 offers optimum transparency, both internally and externally, of the problems you are trying to solve. And it's a clear process, step-by-step. That's what I like about it and already experienced at Avianca.

"But the proof is in the eating of the pudding: can you attract new equity from investors? In our case: yes. We attracted $1.2bn in new capital, which has saved the company. We shed over $2bn of debt. It outlined our path into the future that, in our case, includes a path towards consolidation with Air France-KLM. I have always been clear about the need for consolidation, which is more difficult to achieve under normal restructuring procedures."

Looking back, Van der Werff doesn't recall a red flag during Chapter 11 when things got critical: "In the end, we had 100% support from creditors. The fact that Chapter 11 gives you bankruptcy protection is so important. It's never nice and easy, but you always find a solution. In general, there aren't many cases in which Chapter 11 has resulted in a Chapter 7 liquidation."

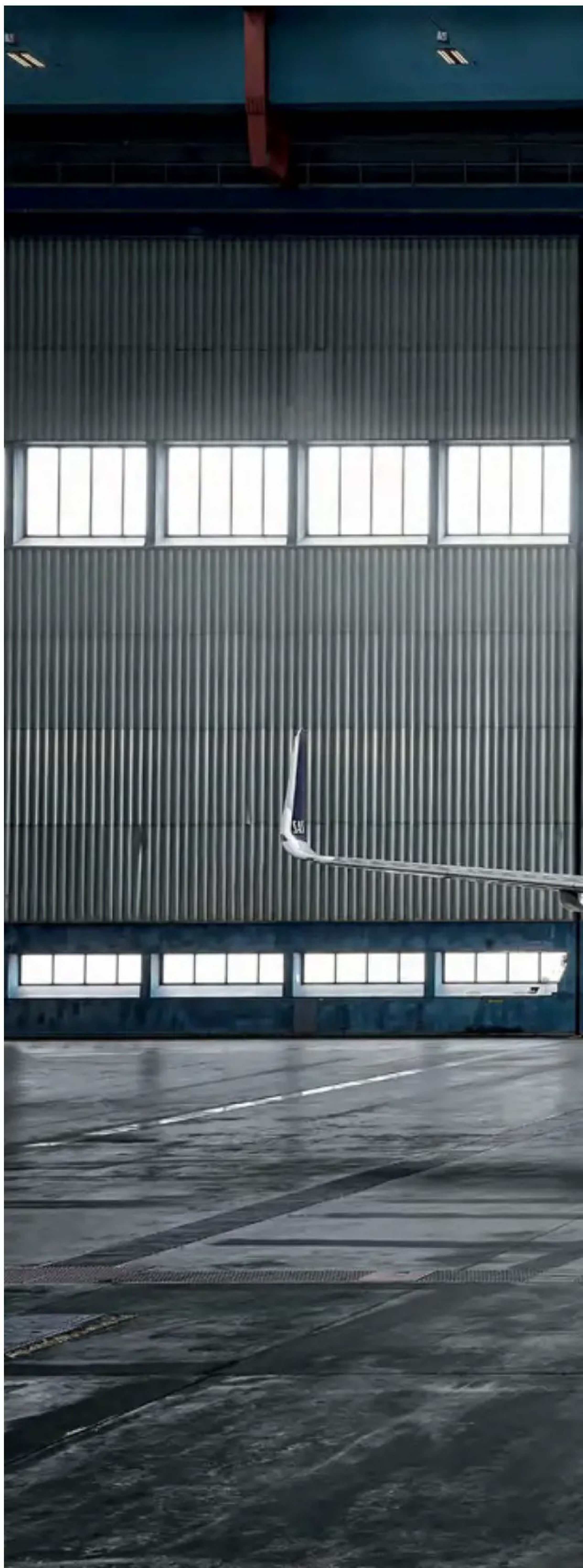
Just before exiting Chapter 11, net debt had grown to SEK36-39bn



LEFT: ***SAS was a founding member of Star Alliance, however, on September 1, 2024, it joined SkyTeam after Air France-KLM acquired a stake in the carrier*** AIRBUS/H GOUSSE/MASTER FILMS

FLYGBRA.SE
BRA
SE-MKC

BELOW: ***In September last year, SAS expanded its partnership with BRA by entering into a long-term wet lease agreement which will see the regional carrier operate 12 ATR 72-600s and a single Airbus A319-100*** AIRTEAMIMAGES.COM/ CHRIS JILLI



ABOVE: ***Irish ACMI operator CityJet flies 14 90-seat Bombardier CRJ-900s for SAS*** AIRTEAMIMAGES.COM/ TMTAVIATION

(£2.6-£2.8bn) but was to come down to SEK22-24bn (£1.6-£1.75bn) post-Chapter 11. Liquidity was expected to grow to SEK11bn (£804m), with revenues for FY24 guided to exceed SEK48bn (£3.5bn). While this certainly makes SAS a healthier airline, with revenues and passenger numbers on the up again, FY24 has not been easy. The airline reported a HY1 (November 2023-April 2024) net loss of SEK2.9bn (£212m), although cash flow from operating activities was a positive SEK3.8bn (£278m). "We expect to break even in FY24 and be positive in FY25, that's realistic," said Van der Werff. As SAS is no longer a listed company, it has stopped filing results in public.

Ownership structure

The main difference between the old and new SAS is the change in ownership structure. Pre-restructuring, SAS was 43.6% state-owned, with Denmark and Sweden the largest single shareholders at 21.8% each. While the business model with Sweden, Norway, and Denmark as stakeholders worked well for years since SAS was founded in 1946, it was no longer valid in 2024.

Van der Werff said: "My political orientation is pretty central-left and pro-state, but an ownership structure with three governments doesn't work these days. Sweden and Denmark held the majority of equity, while Norway participated with various equity instruments. I was very keen on securing private equity and on a path towards consolidation, which would have been impossible to achieve with the old SAS pre-restructuring. I told ministers frequently that one of my

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BELOW: ***SAS emerged from Chapter 11 bankruptcy protection in August 2024*** SAS

ABOVE: ***The Airbus A330-300 continues to be the backbone of the airline's long-haul fleet*** AIRTEAMIMAGES.COM/ YOCHAI

targets is not to come and beg for money again so communities don't have to pay for the dysfunctionalities of the airline industry."

A week after completing the solicitation process, SAS announced on October 3, 2023, that it had selected a consortium as the winning bidder. It received EU approval last June. It has made investor Castlelake the biggest shareholder with 32% (and the holder of 55.2% of convertible debt), ahead of the Danish state at 25.8% (30% debt), Air France-KLM at 19.9% (4.8% debt), and Lind Investment at 8.6% equity (10% debt). The remaining 13.6% is owned by creditors. The consortium invested $1.175bn in SAS, with Castlelake providing another $500m in debtor-in-financing exit funding.

Van der Werff won't disclose the identity of other bidders but stresses that the solicitation process really offered SAS a choice. The airline received dozens of proposals that were narrowed down to multiple bidders. Lufthansa Group is believed to have been one of them.

Air France-KLM

Two elements of the agreement stand out: the minority share of Air France-KLM and, consequently, the move as a founding member of Star Alliance to SkyTeam in September 2024. Both have a profound impact on the future of SAS.

The Franco-Dutch airline group has the option to acquire a majority share in the summer of 2026 if certain financial conditions are met. Air France-KLM Group CEO Ben Smith has frequently stated this is a realistic scenario, as he greatly values the addition of SAS. Van der Werff commented: "We all have seen what they have said about why they believe in the investment in SAS. But if that doesn't happen, we can do an IPO (public offering) and seek fresh investments on the capital market."

At the announcement in 2023, Van der Werff referred to the buy-in as "a transformative step for SAS, becoming part of something bigger and further strengthening our customer and people offering.

BELOW: ***SAS Connect – a subsidiary of SAS Group – operates a fleet of 30 Airbus A320neos*** VINCENZO PACE

ABOVE: ***Once a mainstay of the carrier's widebody fleet, the eight A340-300s were all retired in 2020 when the COVID-19 hit, with the airline's A350s taking over the quadjet's role*** VINCENZO PACE

We will have access to new destinations, more flight options, and enhanced service offerings. Most importantly, it means we will become an even better partner to our colleagues, customers, and the communities that we serve."

The move to SkyTeam should benefit SAS with immediate effect. It connects the airline to the 1,060 destinations of its partner airlines. The airline immediately announced codeshare partnerships with Delta Air Lines and Virgin Atlantic. Together with the expansion of its network out of Copenhagen, Stockholm, and Oslo, the codeshares thrust the Scandinavian carrier more prominently into the transatlantic markets. SAS brings eight million EuroBonus members to the alliance, with a recent surge of younger customers. That's extremely valuable to SkyTeam.

Switching allegiance also opens up the potential to join a transatlantic alliance which was always denied by Lufthansa, United, and Air Canada under Star Alliance. "Star Alliance felt like a welcome house for years, but to be honest, we were never allowed to join the joint venture. For years, we were denied the profits that come with the JV and full integration for our customers. A JV really is a great tool as it makes the world better for travellers. It would offer us the option to serve more destinations on the other side of the Atlantic but also offer more corporate contracts. We have a lot of them in Scandinavia, more than Delta has, just like Delta has in the US. It is a win-win-win."

Where will SAS stand by late 2025 within SkyTeam? "I expect many more codeshares in the coming 12 months. That's not done easily in a week or so and requires a lot of work, IT-wise. It's not the same as a joint venture that can include agreements on capacity, pricing, and contracting, but codeshares open up the reciprocal markets to airlines," said Van der Werff.

"Yes, we have been clear that we wish to join a transatlantic joint venture. Ben Smith also said that this should happen. Will it be within a year? Probably not. First, you have to negotiate a deal and then seek regulatory approval. That will take more than a year, probably closer to two years. We still have to decide when we will commence discussions, but that will depend on how different governments look at it. But both SAS

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Despite seemingly handing back two examples, according to Airbus' December 2024 figures, SAS is still due two more A350-900s originating from a 2013 order for eight examples AIRBUS/ H GOUSSE/MASTER FILMS

SAS signed a 'letter of intent' with Heart Aerospace in 2022 for the option to add the start-up hybrid aircraft maker's ES-30 to its regional fleet HEART AEROSPACE

and Air France-KLM are absolutely determined to make it happen."

Copenhagen

At home, SAS will strengthen its base in Copenhagen, in which the Danish government took a controlling stake in December, to make it a global gateway. This summer, the carrier will operate on 108 routes out of Copenhagen, which compares to 63 from Stockholm/Arlanda, and 50 from Oslo/Gardermoen. This coming May, SAS will launch Copenhagen-Seattle, followed in September by four times weekly services to Seoul, South Korea. This brings intercontinental services from the Danish capital to 15.

On the domestic side, SAS launched three new routes in January and increased frequencies on others. And it announced a five- to seven-year partnership with regional carrier Braathens Regional Airways (BRA) on key routes in Sweden and Scandinavia, starting this January. "We will wet lease 12 ATR turboprops and one Airbus from BRA. This is an important agreement, as we will transfer their aircraft from Stockholm/Bromma to Stockholm/Arlanda. That offers connectivity to a level that Sweden hasn't seen before. We had destinations served from Bromma and others from Arlanda, but connecting from one airport to the other would take you an hour to cross Stockholm. That's not a good product. The domestic market isn't as sustainable as it was since COVID, so we will change this by joining forces with BRA and together with our own regional aircraft."

Speaking of aircraft, the SAS fleet included 124 aircraft in December, but the share of owned and leased aircraft has shifted following lease restructurings. The most recent official numbers are from April 30, 2024. Overall owned has gone from 28 to 21 year-on-year, leased from 75 to 87, wet leases from 28 to 22. The Airbus A320ceo/neo Family fleet stood at 15 owned and 70 leased, with nine more neos on order through FY26. The backlog also includes two A350-900s, one due for delivery this year and the other in FY26 to complement the existing four. The long-haul fleet also includes eight A330-300s.

SAS is looking at renewing and growing its short-haul fleet, which currently comprises ten Embraer E195s. Candidates are the Embraer E2 and the Airbus A220, but both have an Achilles' heel: the Pratt & Whitney GTF engine: "The engine isn't working properly," said Van der Werff. It's a leap of faith if you want to go for it. P&W promises improvements, but they have to come [a long way]. The engine is a risk for airlines and we aren't keen to suffer from that.

ABOVE: ***SAS' A321LRs are configured in a 157-seat three-class layout with space for 22 in business, 12 in premium economy and 123 in economy*** VINCENZO PACE

RIGHT: ***Commencing operations in 2022, SAS Link flies a ten-strong fleet of Embraer E195s*** AIRTEAMIMAGES.COM/ MARKUS MAINKA

ABOVE: ***As evidenced by the marking on the aft fuselage of its aircraft, SAS Scandinavian Airlines is the flag carrier for Norway, Sweden and Denmark*** AIRBUS/H GOUSSE/MASTER FILMS

For now, we prefer to continue wet leasing with CityJet and BRA."

The carrier remains interested in the hybrid-electric Heart Aerospace ES-30, for which SAS signed a letter of intent in 2022. Van der Werff is a member of the Heart advisory board and continues to believe in the concept, but he is also realistic: "We absolutely have confidence in Heart, but I won't be surprised if entry into service will be 2029 rather than 2028. You have to be honest that all sustainability initiatives, be it sustainable aviation fuels (SAF), electric aviation, and hydrogen still have to become a reality. But it would be logical if, one day, BRA would fly with Hearts."

Scandinavian

This year will be pivotal for SAS. The airline will have to demonstrate that it has found its way up again after the most drastic restructuring in its history, that it benefits from SkyTeam more than it did from Star Alliance, and that Air France-KLM and the new shareholders are dedicated investors.

Work continues on the SAS FORWARD plan that will see some adjustments, said Van der Werff: "We clearly communicated internally that FORWARD will continue. But it will be adapted. For example, when we launched it in 2022, changing from Star Alliance to SkyTeam was not part of it. All resources for IT were channelled from other projects to the new alliance, with the effect that we haven't been able to do things that we had planned to do. As a consequence, we suffered a year's delay with various other initiatives, but the foundations are still very much valid."

About one thing, Anko van der Werff isn't worried: that SAS has become less Scandinavian under the new ownership. "I don't think so," he said. "Scandinavia is where our market is, we are critical infrastructure for [the region]. When Sweden announced it would sell its shares, I said: 'You can take Sweden out of SAS, but you can't take SAS out of Sweden.' This is where we are based and from where our pilots, cabin crew, and maintenance staff operate. People here are happy that SAS was rescued and some 11,000 jobs [were] saved." AW

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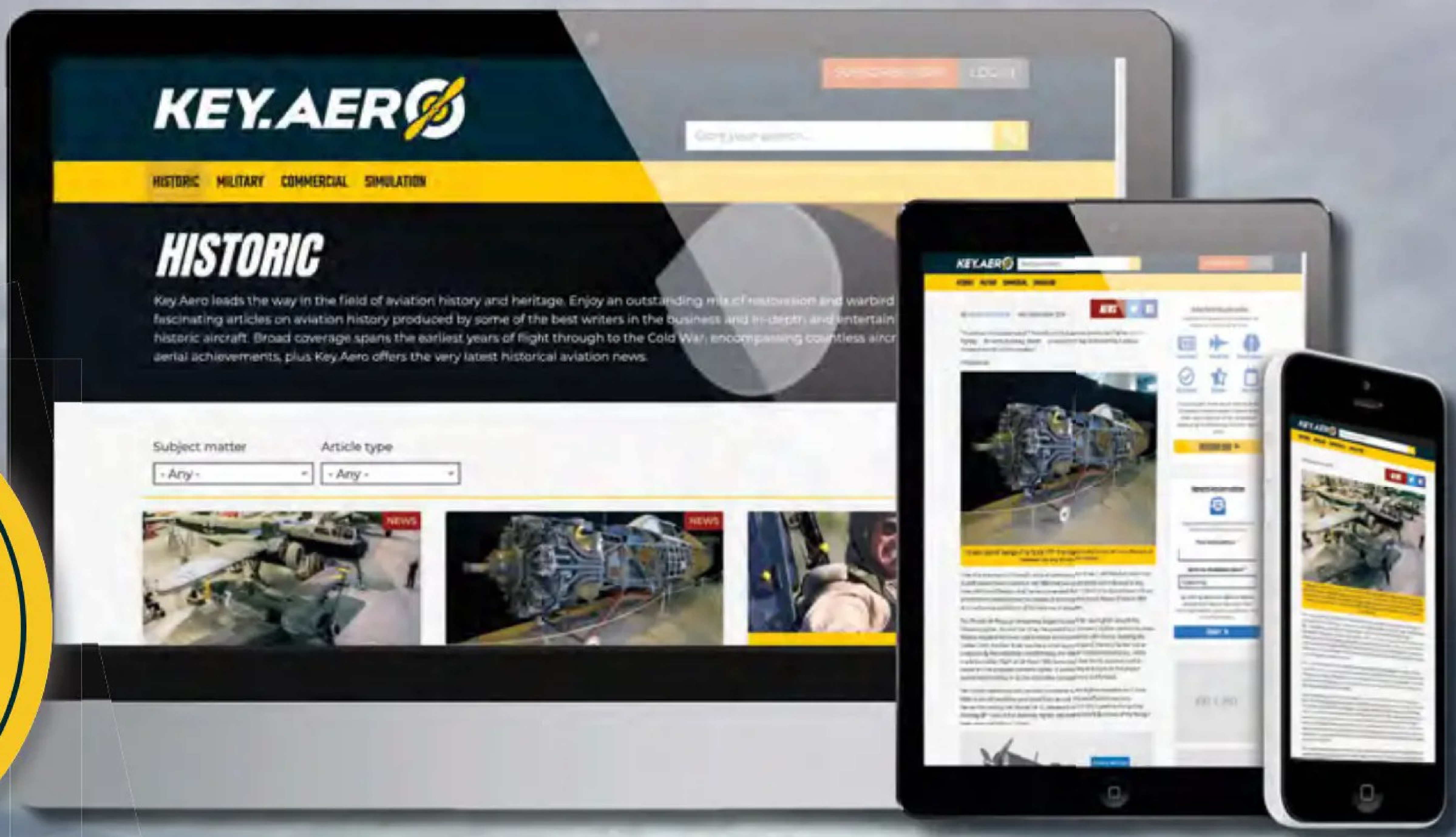
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